

# Information And Communication Technology

Classes Nine-Ten



NATIONAL CURRICULUM AND TEXTBOOK BOARD, BANGLADESH

**Prescribed by the National Curriculum and Textbook Board  
as a textbook for classes nine and ten from the academic year 2015**

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# **Information and Communication Technology**

## **Classes Nine-Ten**

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## **Preface**

The aim of secondary education is to make the learners fit for entry into higher education by flourishing their latent talents and prospects with a view to building the nation with the spirit of the Language Movement and the Liberation War. To make the learners skilled and competent citizens of the country based on the economic, social, cultural and environmental settings is also an important issue of secondary education.

The textbooks of secondary level have been written and compiled according to the revised curriculum 2012 in accordance with the aims and objectives of National Education Policy-2010. Contents and presentations of the textbooks have been selected according to the moral and humanistic values of Bengali tradition and culture and the spirit of Liberation War 1971 ensuring equal dignity for all irrespective of caste and creed of different religions and sex.

The present government is committed to ensure the successful implementation of Vision 2021. Honorable Prime Minister, Government of the People's Republic of Bangladesh, Sheikh Hasina expressed her firm determination to make the country free from illiteracy and instructed the concerned authority to give free textbooks to every student of the country. National Curriculum and Textbook Board started to distribute textbooks free of cost since 2010 according to her instruction.

The government has been working hard to make the life of the people of Bangladesh easy, comfortable and cheerful by implementing the Digital Bangladesh using information and communication technology based education. So Information and Communication Technology subject has been made compulsory from class VI to XII in the National Education Policy. To give the purpose forward the curriculum and textbook have been developed. We hope this textbook will impart information and communication technology literacy to the students and develop in them a keen interest that will play an effective role in making Digital Bangladesh.

I thank sincerely all for their intellectual labor who were involved in the process of revision, writing, editing, art and design of the textbook.

**Prof. Narayan Chandra Saha**

Chairman

National Curriculum and Textbook Board, Bangladesh.



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## First Chapter

# Information and Communication Technology and Our Bangladesh



**After completing this chapter, we will be able to :**

- Explain the significance of ICT;
- Explain the contributions of the people related with ICT;
- Explain the importance of e-learning in Bangladesh;
- Explain the necessity of e-governance in Bangladesh;
- Explain the importance of e-service in Bangladesh;
- Explain the importance of e-commerce in Bangladesh;
- Analyse the prospect of ICT in job-sectors in Bangladesh;
- Explain the role of ICT in social networking;
- Explain the positive aspects of ICT in entertainment;
- Explain the future image of ICT oriented Bangladesh; and
- Design a poster on ICT oriented Bangladesh.

## The 21st Century and Information and Communication Technology

The concept of wealth prevailed in the last century has radically changed. The whole world rightly acknowledges that the wealth of the 21st century is knowledge. It means that neither agriculture, mineral resources and energy, nor industry and business are the sources of wealth as human beings are the only resources able to search for knowledge. This concept has reshaped the people's way of thinking throughout the world. They have been taking preparation to face the challenges of the 21st century.

We have already started realising that the world of the 21st century is making its firm standing on a knowledge-based economy. In this century, two more important factors - globalisation and internationalisation have come into being, and ICT is the main driving force behind their acceleration. Now the geographical border of a country transcending own extends to all parts of the world as an effect of globalisation. We can refer to Bangladesh as an example of making the point clear. Millions of bangladeshis now live all over the world. The place where they live in is as if a small Bangladesh. So, in one sense, the border of Bangladesh has extended beyond the line. Moreover, they, in spite of being the natives of Bangladesh, are living as the citizens of different countries. 'Internationalism' is the unwritten law of the present world.

Once people had to depend on the blessings of nature for survival. However, inventing machines and tools, they have lessened this dependence. With the help of machines and technology, they have controlled the world economy after the Industrial Revolution in the 18th and 19th Century. The nations, who participated in the industrial revolution, once ruled the world. A similar shift of power has been observed, as the knowledge-based economy has started dominating the world in the 21st Century.

We can realise that we should take adequate preparation for taking part in this revolution. The specific skills for survival are the ability to cooperate and communication with each other, awareness about the obligations of citizenry, acumen in solving problems, critical thinking, creativity and skill in



ICT Competition

ICT. In fact, skill in ICT has emerged as the most important technological skill. Everyone should have the basic computer literacy to survive in 21st century. Only then, one may have access to its amazing world. Unless students acquire the ICT skills, they may not generate new knowledge by collecting, analysing, and evaluating information. In fact, without the skill, they can never face the challenge in the 21st Century and position themselves in the knowledge based society.

### Great ICT Personalities

Many scientists, visionaries and engineers have contributed significantly to the development of Information and Communication Technology. Cable connection and wireless system, acceleration of computers' counting power and the development of microelectronics have ensured rapid growth of ICT.

Charles Babbage (1791-1871), an English engineer and mathematician, first introduced computer and developed the device. He is regarded as the father of modern computer. He invented Difference Engine. In 1991, in the Science Museum of London, an engine was made according to the design of Babbage, and it worked properly as expected and later, he designed a calculating machine called Analytical Engine.



Charles Babbage



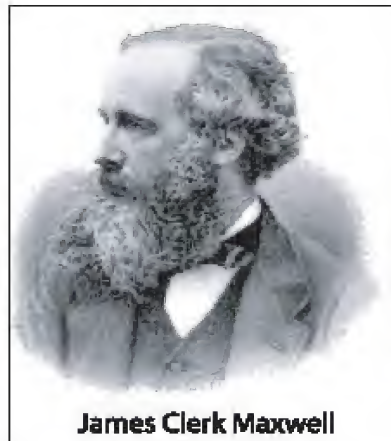
Ada Lovelace

Ada Lovelace (1815-1852), the daughter of poet Lord Byron first thought about how the process of calculation could be made more effective. She became interested in science and mathematics since her childhood encouraged by her mother. When she met Charles Babbage in 1833, she brought before him the concept of 'programming' to use in his analytical engine. That is why Ada Lovelace is honoured as the pioneer of programming concept. Babbage delivered a lecture about his engine in 1842 at Turin University. Then Ada with the help of Babbage explained the ways how the engine could



work. She marked it in numerical order, while describing its mode of working. In 1953, when the note was published again one hundred years after the death of Ada, the scientist realised that it was Ada who put forward the idea about Algorithm of programming.

Important progress was done in physics during that period along with the inventions of Babbage and Ada. Scientist James Clerk Maxwell (1831-1879), combining the electric energy and magnetic force, put forth the theory of Electromagnetic Force which opened a possibility of sending wireless messages from one place to another.



James Clerk Maxwell



Jagadish Chandra Bose

Bengali scientist Jagadish Chandra Bose (1858-1937)

became successful for the first time in sending wireless messages from one place to another. In 1895, he successfully did it by using microwave.

But, Italian scientist Guglielmo Marconi (1874 - 1937) succeeded first in doing the same work by radiowave. That is

why he is acknowledged as the inventor of radio.



Guglielmo Marconi



Raymond Samuel Tomlinson

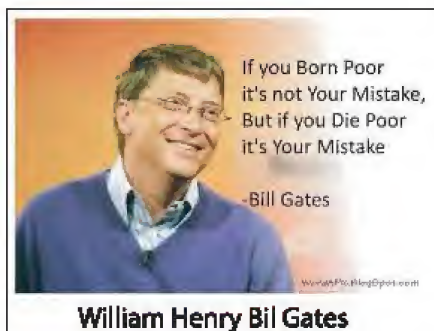
In the 20th Century, after the development of electronics, IBM Company first built mainframe computer after the development

of electronics. In 1971, making of cost-saving computer. In 1971, with the invention of the microprocessor, it became easier to make affordable computers. In the 60s and 70s, using the

Internet Protocol, Arpanet was invented the Internet protocol. The interrelation among the computers through network started developing since then, and the invention of the Internet is the outcome. In 1971, American programmer Raymond Samuel Tomlinson introduced first electronic mail communication through ARPANET. He is the pioneer of inventing e-mail system.



Steve Jobs



William Henry Bil Gates

After the invention of microprocessor, making of personal computer by using this device started in the USA. Steve Jobs (1955-2011) and his two friends Steve Wozniak and Ronald Wayne started a company named Apple Computer on April 1, 1976. This company is one of the biggest organisations in the world. The development of personal computer has been carried out by this company.

IBM company put the responsibility of developing the operating system for personal computers on 'Microsoft' of William Henry Bill Gates (born on October 26, 1955). They successfully developed MS DOS and Windows operating system. At present, most of the computers of the world are run by the operating system software of Microsoft company of Bill Gates.

In 1989, during the development of the Internet, a British computer scientist proposed and later on successfully invented information anagement by using Hypertext Transfer Protocol (http) and successfully invented it. Sir Timothy John 'Tim' Berners Lee is known as the pioneer of World Wide Weave (WWW). The Internet connection spread out throughout the world for its development. A strong economic field has been created on the Internet and different types of application software have been developed.



John 'Tim' Berners Lee



The learner of Harvard University Mark Zuckerberg (Born on may 14, 1984) and his four friends are the pioneers of creating social networking system facebook in the Internet. At first, it was confined to the university students, but according to the statistics of May 2014, at least 119 crore people of the world have been using facebook. Many people in our Bangladesh use facebook for social networking.

## E-learning and Bangladesh

For years, knowledge has been acquired across the world in traditional methods. The innovation and development of ICT have brought about changes for the first time in the traditional methods. And we have become familiar with the terms like e-learning and Distance Learning. E-learning is the short version of electronic learning which basically means a teaching process by using CD-ROM, the Internet, personal network and TV channels, however, we should keep in mind that e-learning is not the alternative or substitute of conventional way of learning. For example, it is hard to demonstrate in class different scientific and natural phenomena, such as, solar eclipse, moon eclipse, and so on. A teacher may demonstrate these phenomena with images, videos, and graphs with the help of multi-media. The class can be interactive too.

Bangladesh has a huge population, and that is why the class size is usually big. The schools of our country lack skilled teachers, teaching learning materials, science laboratories, etc. The students do not have wide scope of doing scientific experiments. E-learning can play a vital role to solve these problems. A lesson conducted by a skilled teacher may be recorded and distributed to hundreds of schools. Different learning materials for teaching a specific subject can be given to students. Teachers themselves may make their lessons more effective to teach their subjects and these lessons may be reused in other classes.

Teaching and learning materials are made for e-learning all over the world. Renowned universities of the world have introduced some online courses and



anybody can take any of these courses. Experimentation is going on to develop the field, and a learner can take the course either by submitting his homework or sitting for examination online, and can get the requisite credit.

Bangladesh is not lagging behind in e-learning. The ICT specialists of the country have opened some web portals offering courses in Bangla, and learners from any part of the world can take the courses. The ICT oriented, specifically for imparting training in computer programming have earned popularity at home and abroad.

Though e-learning can play a vital role in over-coming the limitations of teaching in Bangladesh. However, e-learning is not a substitute of the conventional teaching method of a classroom in which teachers and students have face-to-face interactions, exchange of opinions, and question and answer sessions. views and the students can ask questions. Moreover, students can interact and help

themselves in learning something. Moreover, teachers and students can assist each other in the learning process and optimise their learning by peer-bonding. Possibilities of interactions are minimal in e-learning. As e-learning requires little human participation, it may become mechanical. Therefore, in order to make e-learning successful, students need to be very pro-active. E-learning has a wide scope in Bangladesh as we can solve limitations in classroom teaching may be minimised by adopting e-learning. However, implementation of e-learning practices in classroom will require fast internet connectivity, necessary infra-structure, and e-learning materials.

### **Group Activity**

Discuss in group and present how e-learning can play a vital role in the development of education.

## **E-Governance and Bangladesh**

Transparency and accountability are needed for a good governance. A modern, transparent, and accountable governance can be can be ensured by introducing digital system. It will ensure good governance This will stop the harassment of citizens and pave the way of good governance. The application of electronic or digital method in the government administration is called e-governance.

Once, it was very difficult for the examinees and their guardians to collect the result of the public examination. It was more difficult for the people living in the remote villages. Even two decades ago they could not collect their results a week after the publication of the result even, now they can get it either through the internet or the SMS option of the mobile phone. So, the trouble of collecting the result instantly has come to an end.

Another example of e-governance is the facility of submitting applications to the higher educational institutions. with the help of the mobile phone. Previously if a candidate of Jessore wanted to apply to Shahjalal University of Science and Technology, he had to complete a series of formalities candidates or their representatives had to travel to Sylhet in order to collect and submit university admission application forms. Now candidates may submit their application through mobile phones. They need not to travel from one city to another.

District offices of the Deputy Commissioners have E-service Centres in order to ensure easy, affordable, and hassle-free services. Now a service Delivery of services that took 2-3 weeks in the past now takes only 2-5 days. On top of it, digitalisation of the information has reduced the time in decision making by 80% - 90%. Government departments have become transparent and accountable in providing their services and increased their efficiency in issuing copies of deeds and settlement records.

The manual process of paying gas, electricity and water bills is time-consuming and troublesome. Sometimes the busy hours of a day are spent to pay the utility bills. Now the bills can be paid either through online or cell phones. The target of the Government is to ensure better life standard and hassle-free life for its citizens. E-governance has made some services accessible 24 hours a day, seven days a week, and 365 days a year. Some of these services, for example, are ATM services, mobile banking, information services, etc. As a result, citizens may avail the service at their convenience.

In addition, with the introduction of e-services, inter-departmental communication and net-working within the Government has increased. Government employees have also become skilled. As a result, providing faster service has become easier.

Bangladesh has introduced e-governance for a few years. E-service is yet to be introduced to all sectors of the governance. With its successful implementation in every sector, Bangladesh will certainly lead to good governance.

## E-Service and Bangladesh

Many government and non-government service providing organisations provide the citizens with temporary and full time services. This might be travelling from one place to another or issuing duplicate records of a land. Before the introduction of digital system, the service seekers had to meet the service provider, but now they can have the service through the internet or mobile phone staying at his own home, for example, services at home, such as purchasing tickets through the internet or mobile phone. People, a few days ago, had to go physically to Kamalapur train station, and stand in the queue before the counters for tickets. This system is still in practice, but now anyone can collect tickets and pay the fares online. Providing service through electronic system is called e-service. E-service ensures availability of services at low cost in the shortest possible time without much hassle. E-service has already been introduced to several ministries, departments and directorates of the Government of Bangladesh.

The digital edition of textbooks, e-settlement records, e-permit, e-ticket, telemedicine, e-tin registration and income tax calculation, etc. are the examples of e-services.

**A. E-permit:** It is one of the primary e-services of the country. The sugar cane farmers of fifteen sugar-mills of the country get e-permit through the message option of the cell phone. E-permit is the official permission of the sugar mills authority for the farmers to supply sugar canes in a fixed time. The harassment of the farmers has come to an end as they receive the information of supplying sugar canes through sms. The production of the sugar mills has also been increased for timely supply of sugar canes.

Electronic Reservation Slip		BCTC E-Ticketing Agent	
<ul style="list-style-type: none"> <li>This ticket will only be valid along with an ID proof in original. If found travelling without ID Proof, Passenger will be treated as without ticket and charged as per extant Railway rules.</li> <li>Valid IDs to be presented during train journey by one of the passenger booked on an e-ticket :- Voter Identity Card / Passport / PAN Card / Driving License / Photo ID card issued by Central / State Govt. / Student Identity Card with photograph issued by recognized School or College for their students / Nationalized Bank Passbook with photograph / Credit Cards issued by Banks with laminated photograph.</li> <li>General rules/ Information for e-ticket passenger have to be studied by the customer for cancellation &amp; refund.</li> </ul>			
PNR No.: 270400250	Train No. & Name: 14032 ASH TOON EXPRESS	Quota: General	
Transaction ID: 4564714229	Date & Time of Booking: 26-May-2012 11:20:11 AM	Class of Travel: SL	
From: BALANTHAR CITY	Date of Journey: 29-Jun-2012	To: DHAKA	
Boarding: BALANTHAR CITY	Date of Boarding: 21-Jun-2012	Scheduled Departure: 13:45	
Rese. Up to: DHAKA	Distance: 184 KM	Adult: 02 Child: 00	
Passenger Mobile No: 9172290563	Note: * Depart time period on the ERS is liable to change. New time table from 01-JUL-2011		
Passenger Address: jkt			
<b>FARE DETAILS:</b>			
1	Ticket fare	Rs. 282.00	Rupees Two Hundred Eighty Two Only
2	BCTC Service charges	Rs. 10.00	Rupees Ten Only
3	Agent Service charges	Rs. 10.00	Rupees Ten Only
4	Total	Rs. 302.00	Rupees Three Hundred Two Only
<b>PASSENGER DETAILS:</b>			
S. No.	Name	Age	Sex
1	RAJ KARIA	31	Female
2	UNHA	37	Female
3			
4			
5			
6			

- B. Electronic Money Transfer System (MTS):** Money can be sent at a low cost from one place to another quickly and safely through the electronic money transfer system of Bangladesh Postal Department. It is possible to transfer BDT 50000 in one minute. This service is available in all post-offices in Bangladesh.
- C. E-settlement Records :** The duplicate of land settlement records can be collected through this service. Previously employees of land settlement department would supply the information to the applicants from big record books after filling up the prescribed forms. The applicants had to be present physically in the office and the employees of the concerned department would prepare it manually. Because of the e-service, applicants at home and abroad can receive the settlement records, paying the required fees.
- D. E-healthcare:** Physicians in government health centres give advice on mobile phones. That is why, government hospitals have been provided with mobile phones. Any citizen of the country can get the advice of any physician. Besides, in some hospitals, telemedicine service has been introduced. Because of the telemedical services, patient in upazila may avail the service and advice of medical specialists in district hospitals on mobile phones.
- E. E-tiketing and Mobile Ticketing of Railway:** Tickets of some intercity trains can be collected either through mobile phone or online. As a result, travellers can purchase the ticket at their convenience without going to the ticket counters of the railway station. They can reach the station just before the departure of the train and collect the printed ticket from a particular counter.

## E-commerce and Bangladesh

There is no substitute for trade and business for the progress and creation of jobs in a country. A change has been brought about in the business sector of Bangladesh by the electronic money transfer and exchange process for the innovation of digital technology, the internet and electronic exchanging process besides paper currency. Running business through electronic medium is known as e-commerce.

There are some terms and conditions in business. Firstly, the sellers must have commodity secondly, the buyers will pay the price of the product. This transaction requires direct communication of the seller and buyer. However, in the era of internet, nowadays sellers may create a website and display the

images of his products. The buyers, after choosing his commodity, pay the price and get it. The buyers have the facilities to pay the price through debit and credit cards. They can pay through mobile banking even. Thirdly, on receipt of the payment, the sellers either deliver the products themselves or by the courier. Another payment method is through courier service after receiving the price.

The bill payment can also be done in the Cash on Delivery (COD) method, which is different from mobile banking and debit or credit card payment. The purchaser choose the product from the website of the seller and orders for supply. The seller after getting the order sends it to the buyer who pays the bill after receiving it.

E-commerce has been gradually extending in Bangladesh since 2011-12. Now everything including books, garments, food, luxurious goods, etc. is being sold or bought through e-commerce. Two types of establishments are noticed in e-commerce like conventional business. One kind of establishment only sells their own products and another kind sells the products of different companies. You have already watched advertisements of some websites on the internet, television and in the newspaper.

### **ICT in the Job Sector of Bangladesh**

Nowadays, the multifarious use and impact of ICT in the job sector is noticed in Bangladesh like other countries. The impact and capacity of ICT are gradually increasing. Two types of impact of ICT are noticed. First, the introduction of ICT in the prevailing working sectors has enhanced the skills of the employees and extended the market. Second, ICT itself has created new job-opportunities.

The use of ICT in the prevailing existing job sector and old business sectors, on the one hand, has enhanced the efficiency, transparency and accountability of the professional groups on the other hand, it has increased the standard of service. Skill in ICT is now regarded as the elementary qualification for any job. TEmployees of banks, insurance, multinational companies, government sectors need to be skilled in word processing, presentation software, internet browsing, email management, analytical software, etc. In addition they have to develop expertise in a specific software product, such as banking software. On top of it, ICT has created a large job market of making hardware, software, developing websites, maintenance, etc. Now it is a big market for the skilled workers who can work at home or abroad and set their own ICT firms.



A major part of the task can be accomplished at home. Many people earn foreign currency for the country through outsourcing.

## Social Networking and ICT

Social mobility and development require communication amongst individual human beings. So, social communication means interaction among people through virtual communication and networking. In other words, that what people create and exchange to communicate and express them by using the internet and ICT is called social networking. Now this communication has become easier, cost-effective and usually safe. By using the internet, e-mail, mobile phone and messaging system, blogging and platforms of social networking, the ICT based social networking has been made easy. Platforms have been set up on the internet known as social networking. Two most popular social networking websites are facebook and twitter.

- **www.facebook.com:** Facebook is a website of social networking system. Mark Zuckerberg along with some of his friends launched this site. Anyone can be the member of facebook without any subscription. The users can add friends, send messages, update their personal information and give status share with others. Besides, audios and videos can be sent through it. Any organisation can open their home page on facebook, and at the same time, like minded people can form a facebook group . According to www.statista.com report of march 2015, the number of facebook users in the world is 1415 million.
- **www.twitter.com:** Twitter is a social network too, but it has a basic difference with facebook. The users have to express themselves and exchange opinions within 140 characters. That is why it can be called a website of microblogging. The message of 140 words is called the 'Tweet'. The tweets of Twitters are displayed their profile page. The members of the twitter can follow other members to read the tweets. Those who follow a member are called followers.

## Entertainment and ICT

With the development of ICT, a new era in the entertainment world has started. It has occurred in two ways. First, how people consume entertainment. Second a qualitative change is noticed in the different mediums of entertainment.

Let us see first how individual media consumption habit has transformed in response to the changes in ICT. Once, people had to go outside for

entertainment. If they wanted to enjoy a film, they had to go to the cinema hall to enjoy a film; to the playground to watch a football match; to a concert to listen to music. Nowadays, there is no need to go outside for entertainment. Radio was invented first, and then the television. The computer came eventually. Internet is the latest addition to the computer. We have discovered that people can enjoy all kinds of entertainments within four walls of their home. When computer first came into being, it was only used for computation and calculation. Only the big organisations and the government could afford computers. However, with the development of technology, computers have become easily available and people have started using them for their personal purposes. Since computers have become more sophisticated processors, huge storage, and considerable memory, they can be used not only for writing or calculation, but also for entertainment. Perhaps, people use computer most for their entertainment. Composing a song, making a movie, and taking a photograph – all can be done on computers. Because of the development of ICT, changes have come to the mediums and forms of entertainment. Since songs can be digitised and converted into MP3 format, they can be played on computers. Similarly, we can watch videos and movies on computers. A huge volume of data can be stored on CD or DVD. Watching movie on DVD player without going to the cinema hall is a very common practice nowadays. Internet with faster speed has become easily available for ‘fibre optic network’. As a result, people do not have to depend on audio CD or DVD either for listening to music or watching films. On top of it, programmes in different radio and television channels can be directly accessed through the Internet. Sometimes recorded programmes are also available on the Internet. Hence, viewers can access these programmes according to their convenience.

New forms of entertainment have appeared with the development of ICT. Computer game is one of them. Big industries of computer games are established all over the world and the experts of these industries are innovating computer games of various sorts. The extensive popularity of computer games demonstrates its immense success as a new medium of entertainment. One of the reasons for their success is that computer games entertain people across age with different preferences. These games can be played with others, the computer itself, or even with gamers in a remote place via network. In fact, it should be noted here that excessive and compulsive use of computer or video games may become so strong that it can easily turn into addiction. That is why people around the world are warned about the negative consequences of compulsive computer or video gaming. Development in ICT played a vital role



in the emergence of new forms of entertainment. Once, making animation or cartoon films was very difficult. It has become easier for ICT and high-end/super computers. Not only that, innovations done by creative designers have brought about changes to graphic works. Digital actors and actresses have been created on computers for graphic movies that are no longer dependent on real actors and actresses. Use of high-end/ super computers in creating imaginary dinosaurs and aliens for popular commercially successful films is very common nowadays.

In one word, ICT has not only created new forms of entertainment, but also made them accessible to the mass. Most importantly, ICT has revolutionised the entertainment industry and its ultimate future in the entertainment industry is beyond one's imagination.

### Digital Bangladesh

The present government has undertaken a plan to establish 'Digital Bangladesh' for the first time. Bangladesh conquered its independence through enormous bloodshed in the liberation war of 1971. We will be celebrating the golden jubilee in 2021, and that is why we are determined to take out motherland to the highest pick of success. 'Digital Bangladesh' is the means to materialise the vision. The Government and general citizens have taken initiative to materialise the dream.

First we should know what we mean by 'analogue' and 'digital'. An analogue signal is a kind of continuous and infinitely variable representation of data or information. As an example, we may discuss about the measurement and record of daily temperature. Temperature varies throughout the day and the temperature inside the home can also be much different than that outside. Representation of any small amount of change in the temperature through a signal may be called an analogue signal. However, an analogue signal may not always give information in precise accuracy and reliability.

A digital signal converts the information into numbers (digits) and displays and stores the information in numbers. Hence, it is called digital signals. Since the digital signal indicates the values of the quantity in a digital format, that is, in numerical forms, it gives more accurate information than the analogue signal. It is generally quicker and easier to read than the analogue one. For example, a watch, with a high-precision movement of an hour hand, a minute hand and a second hand, gives an analogue signal as a measure of time passing. By contrast, a watch, with an electronic display of time in numbers, gives a digital

signal. the phrase 'Digital Bangladesh' is not used to indicate Bangladesh as a 'Computer Oriented Country'. Its implication is more extensive. Digital Bangladesh refers to a modern Bangladesh, developed with the help of ICT. The objectives of Digital Bangladesh are to ensure better education and health and more job opportunities and eradication of poverty. SIn order to fulfil these objectives, it is important to bring changes to our old conventional mind-set and be positive and inventive. The fundamental aim underlying Digital Bangladesh is to ensure democracy, human rights, transparency, accountability, and justice with the maximum utility of technology. The main thrust of the objectives is to improve the standard of living of citizens' from all social classes. In order to fulfil the objective of Digital Bangladesh, the Government has focused on four specific factors: human resource development, participatory citizenship, civil services reformation, and inclusion of technology in everyday life.

Bangladesh has started developing information and communication technology late in comparison with other countries. That is why Bangladesh is significantly lagging behind. Even though the significance of ICT was not realised, nowadays ICT is getting importance properly. We are getting high speed internet conection as we are connected to the submarine cable.

There is a positive side of the extension of technology. If a nation lags behind at a moment in any particular technology, it does not mean it will stumble all the time. It leapfrogs other countries. Bangladesh is trying her level best to be equal with other countries by using all her might.

The infrastructure for information technology has started to be constructed in the country by the intent of the present government. Setting up fibre optic connection throughout the country, an initiative is taken to provide the internet service to remote area. The number of telephone users was negligible in the country just before one and half decade, but now every adult person uses a phone. Information service centres have been opened at the union level, the post offices of the remote areas are transformed into e-centres that provides the service of mobile money trnasaction. The district information cell and the national information cell with the union information centres are important additions to the infrastructure of the country. The tasks like registration of admission test, getting the result of public examination, and purchasing train tickets are being done regularly on the mobile phone. ICT course is included in the curriculum of school and college. This textbook is an example of that. Computer science is being taught in the colleges and universities. The younger

generation of the country is joining the software companies along with setting their own firms, and a large number of young people are strengthening the economy of the country through outsourcing.

No one should come to a conclusion just listening to the successful story of ICT that we have reached the zenith of our target. We have to walk a long way to achieve the goal. As most of the people of our country live in the villages, the first step to 'Digital Bangladesh' is bringing these village people to the network of ICT services. So, we have to build up large infrastructures. A skilled manpower is required to avail of the opportunity of ICT to the utmost level. So, we should develop expertise in this sector. The standard of education of colleges and universities should be enhanced and a good number of students should be skilled in ICT. Transparency should be ensured through e-governance. The new generation should be encouraged to use their innovative power, and a co-ordination between universities and information and communication technology is must that we can make a real 'Digital Bangladesh'.

### Activity

Design a poster about what to do for building up 'Digital Bangladesh'.

### Exercise

1. In which year was London Science Museum successful in making the engine capable of calculating mechanically?  
A. 1833  
B. 1842  
C. 1953  
D. 1991
2. Which scientist made it possible to do office from home?  
A. Charles Babbage  
B. Ada Lovelace  
C. James Clerk Maxwell  
D. Jagodish Chandra Bose
3. Who is the inventor of facebook?  
A. Steve Jobs  
B. Bill Gates  
C. Mark Zuckerberg  
D. Tim Berners Lee

4. Because of the use of ICT in government jobs\_

- i. government services can be easily accessed within the shortest possible time;
- ii. The standard of government service can be enhanced;
- iii. Government service can be availed even in holidays;

Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

**Read the section below, and answer questions 5 & 6:**

Sumon fell sick while on a pleasure trip at St. Martin. When he contacted a doctor in Dhaka, he advised him to get himself admitted soon to a hospital. The doctor of the nearby hospital arranged his necessary treatment after consulting with a medical specialist in Dhaka.

5. The technology in which the local doctor can get advice of a specialist doctor is\_

- i. Tele-medicine
- ii. E-healthcare
- iii. E-commerce

Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

6. Which technology played a vital role for the treatment of Sumon?

- A. ICT
- B. Television
- C. Robot
- D. Computer

7. Milon of Jadurcahr, Roumari of Kurigram intends to obtain higher education staying at home. How can ICT help him?

8. What possibilities have been created by ICT for solving unemployment in Bangladesh? Discuss.

## Second Chapter

### Computer and the Security of the User



#### After completing this chapter, we will be able to:

- Explain the importance of computer maintenance;
- Differentiate between software uninstallation and software deletion;
- Explain the importance of using password and anti-virus for the security of computer, data and software;
- Explain the difference between general and social sites ;
- Analyse the consequence of the excessive use of the internet;
- Explain the negative aspects of playing games excessively;
- Describe the event of software piracy;
- Explain the importance of copyright law;
- Explain the necessity of security with reference to the free flow of information in the internet;
- Explain the importance of troubleshooting in computer;
- Install and uninstall software following the right process;
- Prepare unique password; and
- Troubleshoot the usual problems of the computer.

## Importance of Software in the Maintenance of Computer

**Story 1:** Raina was very intent on having a laptop from his father after getting admission to the college. As her attainment in the first term examination was good, her father bought her a branded laptop with core i5 processor. Raina was impressed with the quality and speed of the laptop. She installed many pieces of software within few days. However, she noticed a gradual decline in its performance. After one year, she observed that the laptop was running too slow and it was irksome working on the computer. After some days, she made a capricious demand to her father for purchasing another one for her.

**Story 2:** Ankon has recently taken internet connection for the computer. Now he frequently browses the Web and has benefitted greatly from the sites with the information related to his study. Besides education, he uses the internet for sending emails, listening to music, and watching movie. Recently he has found the computer often restarting without any prior notification. In addition, the internet browser opens different sites without any command. One day, he inserted a memory stick into the USB connection port on his computer. He was shocked to find out that his files turned into 'shortcuts'. He couldn't even locate the original files.

What do you understand from the above events? Is it similar to your experience? You have already known many things about Information and Communication Technology this time, and you have understood that the processor and software are the main components in ICT. A new computer, be it a desktop, laptop or tablet, usually runs fast, but after some days, it gradually slows down. As it gets old, so it becomes slow. Sometimes, you have to wait for long after giving a command. Situation at times becomes so worse sometimes you become so annoyed that you want to buy a new one.

What is the way to get rid of this situation? Here lies the importance of computer maintenance. You have learnt a little about computer maintenance in the junior Class. Most of the people do not like the task of maintaining ICT or technological devices. However, it is an important task. If you want to keep your ICT device operative, you have to maintain it. You need not to be an expert for that job. We are talking of software-oriented maintenance of ICT devices.



If the Windows Operating System of Microsoft Company is used in your ICT device (almost in all the computers of the world, Windows Operating System is used), you have to check its status and update of the operating system all the time. If the device is connected to the internet, the updates are done automatically. Other operating systems provide a similar kind of facilities same facilities too. In spite of that, you have to use registry clean up software to keep the machine fast. If you do not use this software, your machine will not work properly and it will be a matter of annoyance for you.

Besides, everytime while using the computer, some temporary files are created. If these files are not erased for a long time, they occupy a lot of space in the hard disk and slow down the speed of the computer. That is why we should erase the temporary files with a software. It will make some space free and speed up the computer.

Nowadays, the use of ICT device can not be imagined without the internet connection. Many cookies and temporary internet files are saved in the cash memory of the internet browser when you surf the net. It slows down the computer. If it is not possible to clean up the cash memory everyday, it must be done in every few days' intervals. A piece of software can help you to get the job done.

Using ICT device without anti-virus, anti-spyware and anti-malware is very risky. It's an important maintenance activity that protect the users' device from the attack of virus, malware and spyware, and they can safely use their devices. Now many anti-virus, anti-malware, and anti-spyware software can be downloaded free of cost from the internet and used to protect the computer. Even these pieces of software can be updated from the internet. The use of ICT device without updated anti-virus is very risky.

The computer users can run disk clean up and disk defragmentor to keep the usual speed of the computer. These programmes are attached with the operating system. These two pieces of software clean up the space of hardware and arrange the files in such an order so that the speed of the computer is kept up.



## Installation and Uninstallation of Software

We know that the ICT devices are operated with software. These pieces of software have to be installed in the computer or in other devices. When we purchase any ICT device, the seller asks us about the software that we require. The seller after installing the required pieces of software along with operating software gives it to us. In this way, we can use ICT devices, for example, computer, tablet, smartphone, etc., as we require.

The process of installing operating system software is complex, and expertise is essential for this job. We will have discussions on it in your next Class. In addition to the operating system software, we need different types of software. These pieces of software should be installed on the basis of our needs.

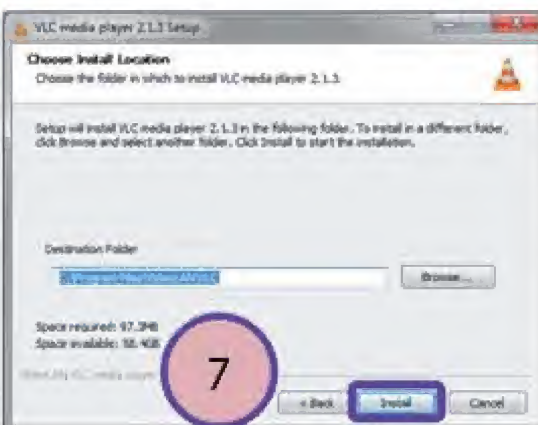
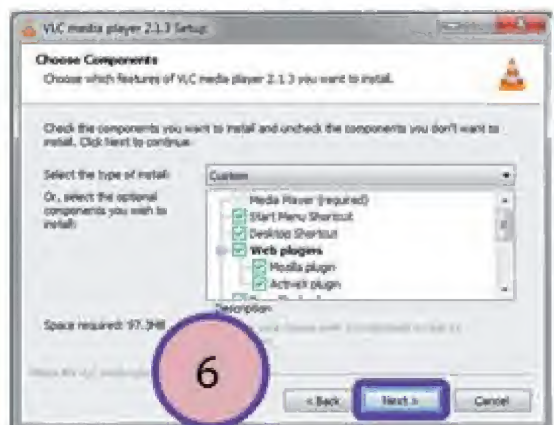
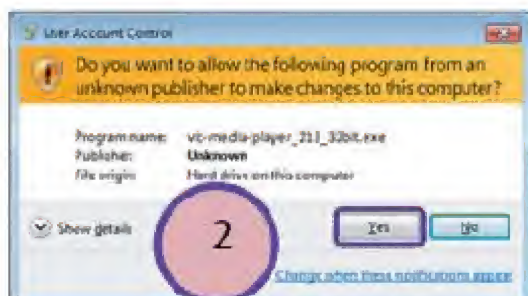
Installation of any software requires special attention to the issues given below:

- Whether the hardware of your device supports the pieces of software to be installed;
- Whether there is anything important in 'read me' file, if any, read it;
- Whether all other works are stopped during installation or not; if not, the installation process often gets hampered;
- Whether the anti-virus software is turned off, and
- Whether the administrator of operating system has the permission or not; (All the devices have the permission except some particular devices. We will discuss in details in the next class.)

Installation of software, except the operating system one, depends almost on the operating system itself. However, the process of installation is almost the same. We need the soft or the digital copy of the piece of software to install it. It can be collected from CD, DVD, Pendrive, or the Internet. In most of the cases, a programme called 'Auto Run' is attached with the software. When you insert CD and DVD or connect a prndrive to the USB port, the 'Auto run' programme becomes activated and the piece of software seeks permission for the set up. Follow the next steps after giving the permission and the piece of software will be installed in your computer. Restarting the device, you will be able to use the programme.

The steps of installing a piece of software is shown below:

Double-click the set up file of the piece of software. The following figure-1 is a set up file. Double clicking on it will start the installation.





The steps can be followed for software installation:

### Activity

Following the steps, install a piece of software suggested by your teacher.

## Installation of Software

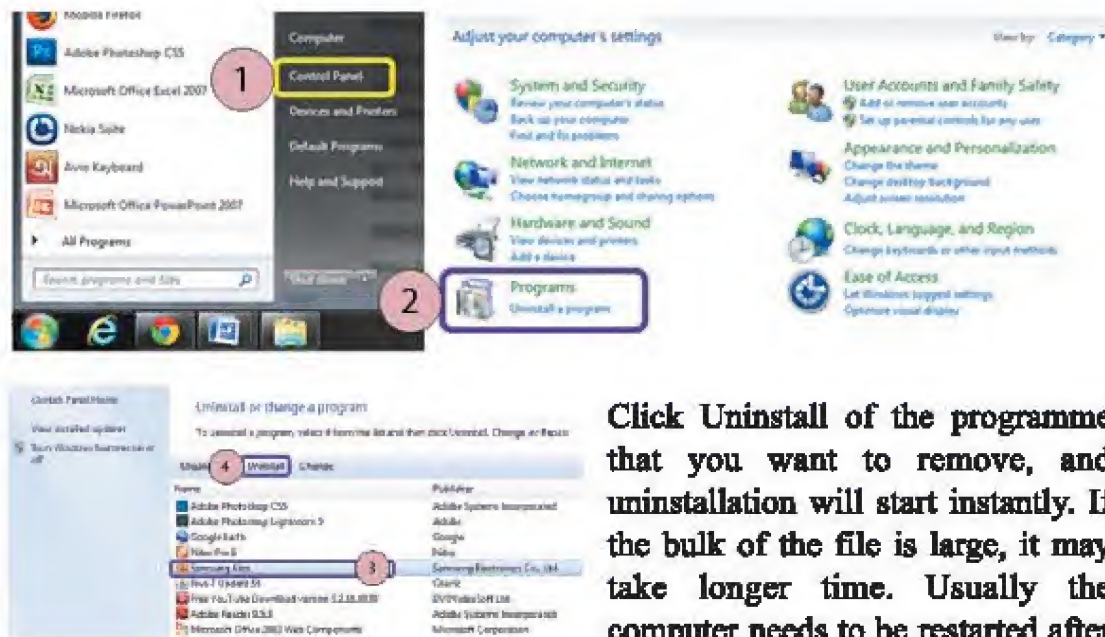
Now you have learnt how to install software. Suppose that you do not need to use a software anymore. What will you do then? Most of the users keep the software in the hard disk. It occupies a space and creates problem to run the ICT device smoothly. So, it's wise to uninstall unnecessary software.

How will we uninstall a software? Operating System Software helps us to get the job done. The nature of all kinds of Operating System Software is almost same. However, it is easier to uninstall software from the device run by the android operating system, especially in the touch-screen smartphone. Select the application from the settings and touch the particular software. A menu will be viewed on the screen. Touch the space where uninstall is written and the piece of software will be uninstalled.

The following steps should be followed to uninstall a software from a computer or an ICT device run by Microsoft Windows Operating System used by most of the people of the world.

Click start button and go to the Control Panel. Then double-click the 'Add or Remove' or point to uninstall a programme.





### Activity

Following the steps, uninstall a piece of software suggested by

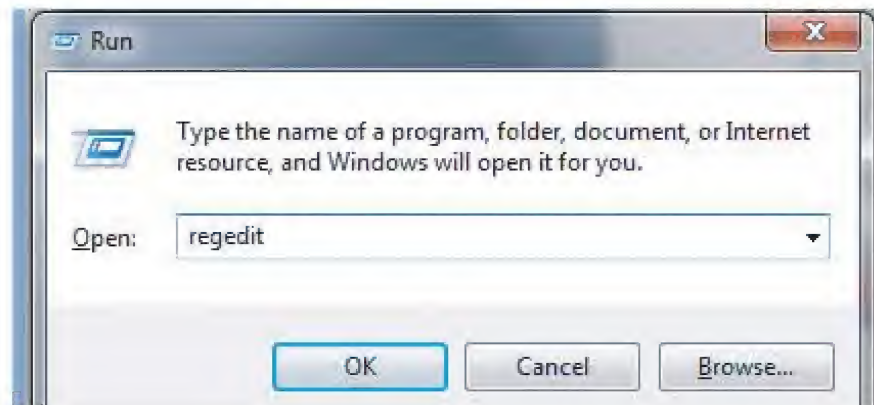
Click Uninstall of the programme that you want to remove, and uninstallation will start instantly. If the bulk of the file is large, it may take longer time. Usually the computer needs to be restarted after the uninstallation of software. Be careful before uninstalling any software, or else, uninstallation of a programme may make it impossible to run the computer without its reinstallation. Therefore, you must be careful of that.


## Deletion of Software

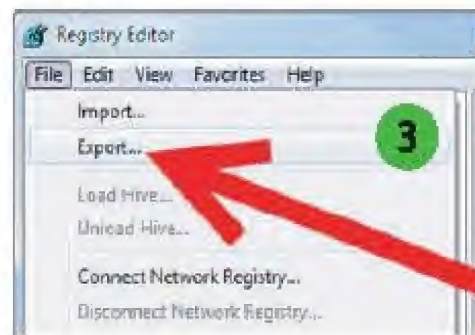
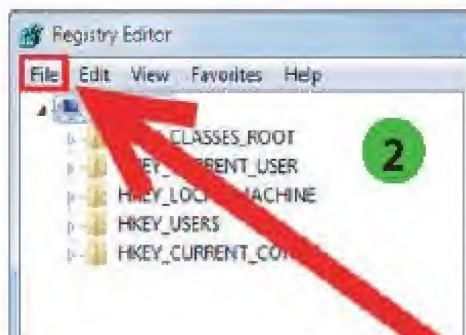
We know that deleting means erasing something. In fact, by uninstalling a piece of software, we delete it from our ICT device. What will we do with 'delete' command then? A software once installed in the ICT device cannot be uninstalled completely, unless it is deleted by following recommended process, rather it creates problems. Some parts of the uninstalled programmes are dumped in the Registry file of the operating system, however it is possible to delete any programme following the steps. The process is shown below, but we should also be careful in doing the job.

The steps to be followed to delete:

At first, uninstall the piece of software as per the previous rule, and follow the next steps:



1. Pressing  +r, activate Run command. Write 'regedit', and press enter.
2. Enter the 'file' menu.
3. Click 'Export'.



4. The drive that contains the operating software, that is 'C', should be selected.

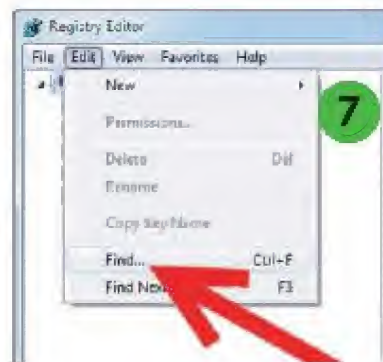
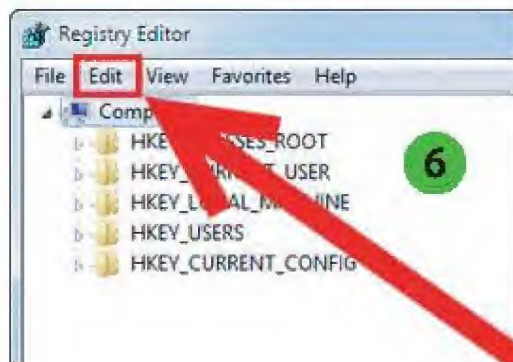


5. Save the file. It is very important. If any error is committed, the system may be repaired.



6. Enter 'Edit' then.

7. Point to 'Find'.



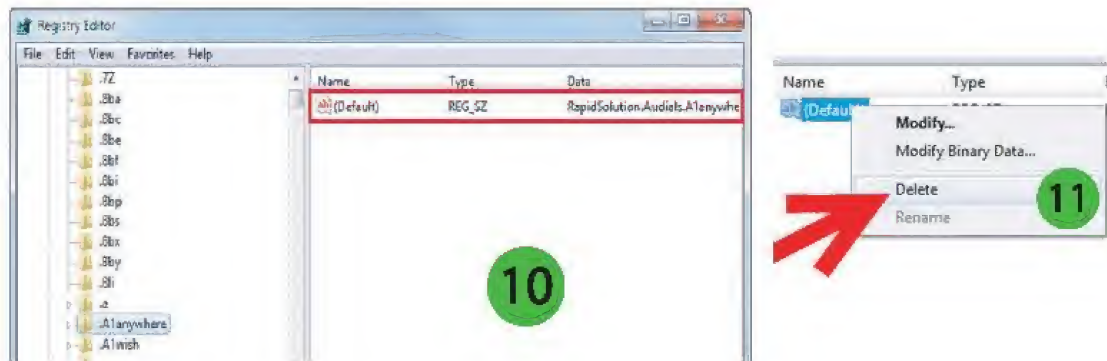
8. Find out the name of the software to be deleted, for example, 'Audials'.

9. Click 'Find Next'.





### 10. Select in this way.



11. Pressing the right button of the mouse, click 'Delete' option.

12. Finally press 'F3' of keyboard and delete all the files having that name from the Registry. In this way, the entire process of deleting will be completed.

#### Group Activity

Comparing uninstallation and deletion, present it.

## Security of your Computer : Computer Virus and Antivirus



We have already learnt many things about the computer virus. In spite of that, we should learn more keeping in mind the security of our computer. It harms the computer As the virus infects the human body, the computer virus infects the computer. The full form of 'VIRUS' is 'Vital Information and Resources Under Siege' which indicates taking control of important information or

damaging something. It was named by Professor Fred Cohen, renowned researcher of University of New Haven. Virus is a kind of software that attacks data and information, and it has the power to increase its number. When a virus enters the computer, it gradually increases in number and attacks the data stored there, and finally makes the computer unusable after infecting the entire device. For example, booting virus attacks booting sector of hard disk. Stone, Vienna, CIH, Folder, Trojan horse, etc. are some most familiar viruses.



If the ICT device is somehow infected with virus, it gradually increases in number. If a virus infected file enters a virus free computer or ICT device through CD, pendrive or any other device. The virus occupied the memory. It stays there even after the computer is turned off. Installation of a virus-infected programme or software also infects the ICT device in the same way. In this way, a virus free computer or ICT device is infected with virus. The same thing happens when a virus infected programme or a software is run.

In this way, the virus occupying the memory, attacks other files and programmes. Some viruses instantly infect all the existing files and programmes, and some viruses infect only new programmes and files. Thus, the virus deletes files and corrupts programmes, and causes a serious damage to the machine. In this way, a virus free computer is gradually infected with virus, and it may spread to other computers through the CDs used in the infected machine, hard disk and the Internet.

The symptoms given below indicate that the computer and ICT devices are infected by a virus.

- Opening a file and programme takes longer than the usual time;
- The memory has little space, leading to a slow performance of the computer;
- Showing unexpected messages incompatible with the works while running the computer;
- Installation of a programme takes longer than the usual time;
- The running files take more space ;
- The machine shuts down during booting or working time;
- The names of the folders are replaced with cryptic names;

A virus can cause the following damages:

- It can erase any saved data or file;
- It can corrupt data;
- Abrupt and unexpected messages can be viewed while working in computer;
- The display of computer monitor can be corrupted;
- The entire system can be slowed down;

What can we do to get rid of this situation? Here comes the question of antivirus. Anti-virus can relieve us from this problem. Antivirus is the preventive of computer virus. If the system is infected with virus, it should be wiped out. Antivirus utility is forced to prevent virus infection. At first, these utilities find similarities with the samples of viruses in infected computers. The antivirus software by using its experience repairs the original programme. An effective antivirus can wipe out hundreds of viruses. When a new virus comes into being, update the antivirus to enhance its power and effectiveness. As a result, it can destroy new virus. Now, there are a lot of antiviruses that can identify, prevent, and wipe out virus. Nowadays, antivirus software remains attached with every Operating System Software. Besides, the existing antiviruses destroy the viruses before the attack or warn the users. Therefore, the anti-virus software developed nowadays is more effective than the one used in the past. So, we should keep the antivirus updated.

Now, we can download antivirus software free of cost from the Internet to get rid of virus-attack, and after installing it, we can ensure the security of the devices. The names of some trustworthy antivirus are given below:

- AVG antivirus software (Downloading Website: [www.avg.com](http://www.avg.com))
- Avira antivirus software (Downloading Website: [www.avira.com](http://www.avira.com))
- Avast antivirus software (Downloading Website: [www.avast.com](http://www.avast.com))

We can follow the steps mentioned below to prevent our ICT device from virus attack:

1. CDs, pendrives, memory cards etc. used in other computers should be cleaned and made virus-free before using in your own computer;
2. Software used in other computers should be virus free before using in your own computer;
3. Any file copied from other computers needs to be cleaned by anti-virus software before you use it in your computer;
4. Be careful when you install a piece of software in your compute from the internet. If the downloaded software contain any virus, that may infect your virusfree computer;
5. Do not install any software used in other computer or device;

6. Always keep updated antivirus software in your computer so that prior warning message can be received when a virus starts attacking the computer. As a result, the computer may be disinfected right away following the recommended process;
7. Data or files of everyday should be saved in different disk or pendrive as a back up, but the disk or pendrive must be virus free;
8. Be careful in exchanging emails. Don't open any email of a doubtful source. If you open it, make it virus free before opening;
9. Be very careful and check virus before using game files;

## Password

Why do we lock the door when all the family members go on an outing? We do it for the security of the house. Think a bit about the lock. Anybody can not open the lock by using any key because different locks have keys. A lock can not be opened with a different key. Thus, we ensure safety of our home and other valuable things with lock and key. Now, we see a kind of lock with digits. The lock is opened by matching the digits. The digits work as the key. But, in an age of digital technology, we have to think over the security of many other things. Perhaps you have understood what we are talking of. You have rightly guessed. We are talking of the security of our data and information. In an age of ICT, we have to use lock for the security of our important data, information and the security of software. The name of this lock is password.

Perhaps you have already learnt to create password and use it. ICT is being used everywhere now. Our country is not an exception. As its use has been extended, the question of security becomes important. All of our personal information such as bank account, income tax, job, etc. have come under the digital system. Besides, our ICT devices such as computer, laptop, tablet or smartphone are being operated with software. When we use the Internet, we can communicate with the computer or ICT devices of the remote parts of the world. Similarly, anyone can communicate and share information with us from anywhere. In this way, our personal information can be transformed to others or our ICT device may become susceptible to hacking or computer security vulnerabilities. We can ensure security to prevent this situation. There is no alternative to secure our information and protect the software of our device. If it is protected with password, nobody can steal our information or damage our

device. But, we should remember one thing that if anybody can steal our password, he can steal our information too. Even, he can destroy it. It is like opening the lock by using duplicate key. Therefore, we should be skilled in creating password. We should not create any password that can easily be guessed by others or we ourselves may forget.

As most of the users create passwords like 123456 or 654321 or abcdef, it becomes easy to steal this type of password. Considering the significance of data or information, it is important to create a unique password.

The security along with secrecy of Password ensures the security of data and information saved in a server, computer or ICT device.

If your password is not unique:

1. Virus may attack easily;
2. The hackers may take the opportunity of hacking the computer; so your money deposited to your account may be transferred elsewhere and your important information may be stolen by others;
3. Information saved in the ICT device may be destroyed for your weak password;

How can you create a unique password? It's a creative work. Your creativity can ensure the security and secrecy of your data and software. If some processes are followed, we can easily do the job.

We should be careful of the following factors while creating a unique password:

- Your name, names of your family members or any personal information should not directly be used though it helps us to remember the password;
- Combination of digits, signs and capital and small letters will strengthen the password. It becomes difficult for others to guess anything about it;
- Password should be long;
- You should not write the password or part of it either in the computer or diary in order or remember it;
- Use a symbol of your own choice to remember the password; It can be your favourite poem, short story, writer, scientific invention, or any historical event.

If creativity is added to this, the password may be unique. Our password could be as follows:

- MoriTeChaHina\_AmiSunDarVhubanE (Rabindranath Tagore)
- AmAr\_AchE\_wateR (Humayun Ahmed)
- 2BornoT2B\_tHatisThe? (To be or not to be, that is the question- From Shakespeare)
- 4Score&7yrsAGO (Four score and seven years ago- From the Gettysburg Address)

**Activity**

Create a password and present .

Changing password is an important task because a regular change of the password ensures the confidentiality of the information stored on the device and safety and security of the ICT device itself. However, password should be something that can be remembered.

### Stay Secured in the Web

The use of information and communication technology in our daily life is gradually increasing. The use of the Internet and online is increasing along with mobile phone and computer. When a computer or mobile device (phone, pad, tab, etc.) stays connected to online, it falls in security risks. The risk factors can be reduced being alert and taking special measures.

An Internet user surfs the website for many reasons. The process of maintaining the security on the web is discussed below:

- A. General site: Many users take the general and cost-free services of yahoo, hotmail, and gmail. The possibility of hacking in every site can not be ignored. If our account is hacked, many of our necessary mail will be lost. Again, the act of cheating or work like this can be operated by using the account, but the liability will be on the account holder.

The precautions given below should be followed:

- An easy password should not be used. Many users use their own names and the easy orders of the keyboard (such as qwerty or asdfg or 123456789) as the password of their email account. It is very unwise as everyone knows that for email, the account is the user's or account holder's name. That is why anybody can hack your account just giving it a few try. So a complicated order or combination for a password such as letters, digits, and signs (!@#, etc.) should be used.

- Password should be changed on a regular basis;
- Use 2-steps verification where there is a scope. For example, the security of your gmail account can be strengthened by your mobile phone. The 2-step verification option of gmail can be used:
  - Point to the account setting from the profile;
  - Get 2-step verification. Click the edit option;
  - Type the number of your mobile phone and click the 'send' button.
  - A security code will be sent from gmail to your mobile phone. Click 'Verify' option typing the verification code;
  - Turn on 2-step verification;

Now, if anybody seeks unauthorized access to your account, he requires the mobile code, but even after knowing the code, he will fail to access the account as the code can be used just once. So, your account will be secured. Similar security measures can be adopted in yahoo! mail in the same way.

- If you send any email from a cyber cafe or the computer constantly used by numerous people, log out the account after using it.

Besides, if you follow some additional security measures, you will remain safe. In some websites, different kinds of programmes are kept installed. If cookie is activated on the web browser, the information stored in the computers and browsers of the users of these pieces of software will be sent to other destination. So, it is necessary to be alert while using the website. Some websites seek different personal information from the users. You should not provide them with the information if there is no particular cause.

B. Social Site: Nowadays, many users keep their personal information on social networking site. They share photographs too. So if the password of facebook account is stolen, the security of personal information can be interrupted, and the female should be more careful. The security measures suggested for the email site should be adopted for these sites too. The following precautions should be taken for using the social networking sites:

- ❖ Have information before developing friendship with someone. Don't be a friend of anybody who does not deserve it;
- ❖ If you make virtual friendship with people abroad, be absolutely sure



about their identity. Check their profile and friend list to identify common friends and acquaintances;

- ❖ Don't share any personal photograph on facebook;
- ❖ Log off everytime after using facebook or email;
- ❖ Sign out after browsing the Internet in school or cyber cafe;
- ❖ Be cautious about using the laptop or computer of your friend or acquaintance;
- ❖ Don't click on any facebook application sent by a stranger if you are not absolutely sure of about its reliability;

C. Age Compatible Site: There are some websites only for the adults. These sites are not suitable for you. This kind of website may put the safety and security of your ICT device at risk and hinder the normal operation of your ICT device. In order to protect the device, you must restrain yourself from clicking on any suspicious photos, links, or advertisements on the website. You should give an effort in developing your knowledge and skills in ICT as well as your moral character.

### Internet Addiction Disorder (IAD)

The word 'addiction' has negative connotations and it is usually used with reference to drug. It destroys life because it is tough to come out of the web of drugs. Perhaps you are confused thinking that how an alarming and negative word 'Addiction' associated with ICT and mentioned in an ICT textbook. Some of you who have computers may have crossed the limit while playing computer games. A few of you didn't leave the computer even though you



should have for an important task. The users who have the internet access have facebook accounts too. Posting status on the facebook, you eagerly wait for a long time to see when somebody gives 'Like' to your status. You have gotten pleasure when the number of your facebook friends has increased. Perhaps you may have spent more time on facebook than the usual. You might have done better in the examination if you had spent less time on this social network. You

could have read some good books or played a bit more in the playground or spent more time with your bother, sister and parents.

Perhaps you, who have been damaging your lives by wasting your time on facebook or by playing computer games more than the usual time, understand the cause of adding a negative word 'Addiction' with the positive words 'Computer' and the 'Internet'. 'Addiction' means when someone, in spite of knowing it a freakish act, can not avoid the temptation of doing it. What is true for drug is true for the computer and the internet too. As drug is harmful for life, so are the computer and the internet if they are used beyond the limit.

### **Addiction to Computer Games**

Addiction to computer games begins from the boyhood, and it usually happens owing to the ignorance of the parents. Computer is a tool and different types of works can be done with it. As many positive words are said of this technology, parents think that what is done by computer is positive. Therefore, when they see their kids sitting before the computer for a long time, they do not think of being alert. Computer game is a



kind of entertainment, and it has a different dimension. If you play computer games merely as entertainment being within the limit, that can be a part of good entertainment. However it does not happen most of the time. People across the age, kinds to adults, may be addicted to computer game. A Korean man died while playing computer game for 50 hours at a stretch. A Chinese couple sold their child to pay for their computer games. These examples remind us that addiction to computer game is not unusual matter. If caution is not taken, a man can easily be addicted to computer game.

As addiction to computer game is new, extensive research works have not been done on it. In future, they will provide us absolute direction. Research has identified the presence of a stimulating chemical in a gamer's brain, addicted to computer games. The shape of a brain is altered in those who use computer 10 hours at a stretch 6 days a week.

Therefore, we should keep in mind that computer game could be a good entertainment, but it is very easy to be addicted to it, and the effect of it is certainly damaging.

## Addiction to Social Networking Site

Man is a social being. They continued a social relation all the time. However, the nature of social communication nowadays is distinctly different from the one in past. It means a different social networking based on the internet. There are some social networking sites such as facebook, twitter, instagram, google+, etc. through which people can keep communication with their circle. Once, these sites were only for the young people, but now people of all age groups use it. They use it not for communicating with others, but also for establishing ideologies and legitimising their opinions. If it was within the periphery of objectives, it would not have created any problem, but it is a matter of regret that addiction to social networking site becomes a problem for the whole world.

The psychiatrists have started carrying on research, and the findings show that the success of the sites depends on how skillfully they can attract the users. The main factor is how often users visit the site and how long they remain on the site. The more the site is visited, the more the site is successful and consequently, the more the site will earn money. Therefore, if the users are not careful about that there is every possibility to develop addiction to these sites.

Another interesting factor was identified by the psychiatrists. Individuals have an inherent desire to impress and admire their own self. In psychology, this is defined as 'narcissism'. The social networking sites instigate this inherent desire of human beings. A competitive attitude develops within everyone to make themselves popular. The users upload minute information of themselves, and when people watch and like it, they become happy. The entire system works like a drug, and users waste their time for hours. In fact, a major waste of time world-wide is caused by the immense popularity of social sites.

## The Way out of Addiction

We have already learned in the previous chapter that a man can be addicted to computer games and social networking sites as he can be addicted to drugs. Therefore, both drug and computer game or social networking site addicts display a similar kind of signs and symptoms. It is wise to be careful than to try to get rid of being an addict. There is an apprehension that the users who do not know anything about the addiction may develop a tendency to it. Since you have read about it in the textbook, you may remain more careful about it.



People may become too preoccupied with it, as they do with other sources of entertainment. However, playing computer games does not increase our knowledge on technology. You will just have the enjoyment by playing computer games, not any technological knowledge. You should be careful about playing computer games so that it may not affect important works of your daily life.

We hope that you will not be addicted to computer games. Similarly you will prevent the people around you from being computer game-addicts. Those who become game-addicts show some particular symptoms. They always think about a particular game, and when they start playing the game, they become excited, and they can not do their daily jobs smoothly. They become inattentive to their studies. When they are forced to keep themselves aloof from playing



games, they feel discomfort. The point of worry is that the addiction may come back even after they become free from this bad habit. The people, who somehow have developed addiction to computer games and want to get rid of it, have to acknowledge to themselves that they have developed an addiction. They have to make a list of the important events of their life. They should convince themselves about the place of computer game on the list. They have to make a list of the problems of their life too, and they should find out the problem caused by playing computer games. They should divide and allocate their time to cover all the important aspects of life – study, homework, playground, extra curricular activities, spending time with the family, and voluntary social works. If they get spare time after doing all these works, they will play computer games then. They should gradually keep themselves busy with creative works rather than play computer games.

The users who have been addicted to social networking sites should proceed in the same way to get rid of the addiction. They should try to convince them that wasting a long time on these websites is a kind of addiction. When you have an intention of watching something on social networking sites, you should ask yourself whether you have really any purpose of watching it. If not, you have

to control yourself. You should note down the duration of time you spend every time on the sites. After summing up the time you spend on it in a day, week, and month, you should come to a conclusion about the volume of work you could have done during this time.

You have to reduce the number of unknown friends from your social networking site to reduce your addiction. You have to convince yourself that after completing the important jobs, you can surf the sites. You have to develop the habit of deactivating social networking sites when you have exams or other important events. You will gradually reduce the addiction in this way, and finally get rid of it completely.

You should remember that every moment of your life is valuable, and it is unwise to spend these moments for any addiction.

## Piracy

The objective of copyright law is to provide the writers, artists, and other with the exclusive right to their creative work. Usually it is expensive and difficult to reprint any book by violating the copyright law, but now it is easy to make 'copy' or 'facsimile' using computer technology. It is not required to be an expert for doing the job. Therefore additional measure is taken to protect the copyright of computer software, graphics, and animation. When the legal right is violated, he is deprived of his copyright. It is usually called 'Piracy' or 'Software Piracy'.

The concerned entrepreneurs, writers or programmers can preserve the right to their intellectual property within the purview of copyright law. That is why it is illegal either to copy or create something new editing the software without the consent of the copyright holders. Therefore, the copy or the new creation has no legal protection. Even though it is easy to pirate computer software, the malpractice is not very frequent in the world. The renowned software companies have formed an agency named 'Business Software Alliance' (BSA) to preserve their copyright and to monitor piracy worldwide. The statement given by the agency in 2011 shows that 7 out of 10 computer users are free from piracy. As software piracy is an easy job, it is difficult to get the right statistics. Software piracy is strictly prohibited in Bangladesh.

## The Urgency of Copyright Law

The copyright law ensures the right or ownership of the creators of his works for a certain time. If the creation has any commercial value, the creator should get it. As poets, litterateur, movie producers, software writers, web designers all require money and web designers earn their living from creative work, they invest labour, intellect, and money in it. They invest money for their labour and merit of creative works. Therefore they should have the right to get their money back either by selling the products or through exchange. The legal right within the purview of copyright law has given them the advantages. Artists or programmers get disappointed if they fail to gain any financial benefits for their creative or intellectual properties. The implementation of copyright law will save the creative workers from being deprived.

## Right to Information and Security

The law of 'Right to Information' is enacted and implemented in different countries of the world to ensure the free flow of information and people's right to have information. 'Freedom of thought, conscience, speech' right to obtain information has been assented as the fundamental right of the citizen's in the constitution of the People's Republic of Bangladesh. As all powers in the Republic belong to the people, a law called 'Right to Information Act-2009' has been enacted to ensure the right of having information. Every citizen has the right to get information from any authority whenever it is sought under the act, and the concerned authority is compelled to provide the information if asked. If people's right to information is ensured through this act, the transparency and accountability of the government, autonomous, statutory organizations, and NGOs funded by the government and foreign organisations will be increased, and corruption will be reduced, and good governance will be established. The right to information has been ensured under the Act and directives have been given to the organisations to preserve information.

The Act has ensured access to important information of the state. The accessibility of government-held information is an important part of government transparency and accountability to its citizens and good governance. However, seeking and receiving information that may jeopardise the security of the state is not permissible in the Act. For example, the Act does not allow access to questions before the public examinations because the



exam processes will become controversial. The secrecy of question papers is secured through 'Right to Information Act'. If technical, technological, or scientific information is leaked out, the organisations stand to lose financially. In this connection, keeping the information secret is not the violation of the rule. The most important factor is that any information that may pose a threat to the security, unity and sovereignty of the state is not obligatory to reveal under this act.

Under section 7 of the Act, the authority is not obliged to provide certain information, such as:

- (i) Any information that poses threat to the the security, integrity, and sovereignty of Bangladesh; if disclosed;
- (ii) Any information in relation to the foreign policy, disclosure of which may jeopardise the relationship with foreign countries, international organisations, local bodies, and organisations;
- (iii) Any confidential information received from the foreign governments;
- (iv) Any confidential sensitive business information, the disclosure of which may violate the intellectual property right of the third-party and any information in relation to Copy Right and Intellectual Property Right;
  - a. any advance information of tax, revenues, VAT, excise duty, budget, or tax rate changes;
  - b. any advance information on changes in currency exchange rate or tax rate;
  - c. any advance information in relation to administration and management of banks and other commercial organisations;
- (v) information, for the disclosure of which may hinder implementation of law or increase the rate of crime;
- (vi) Any information, the disclosure of which may hamper the safety and security of population and may impede a due judicial process;
- (vii) Any information, the disclosure of which may disturb the privacy of individual personal life;
- (viii) Any information, the disclosure of which may endanger individual life and physical safety
- (ix) Any classified information given to law enforcement agencies;

But, it has been laid down in section - 8(9) of the act, that, any information should not be refused by the authority only for the reason that, it is related with the information the disclosure of which is not compulsory rather the information should be separated reasonably and delivered to the applicant.

## General Troubleshooting

This experience is very unusual that electronic devices have not gone out of order or not created troubles during using. Some problems are very usual, and some are unusual and complicated. Usual problems can be fixed by the users, but they have to take the help of experienced people for complicated problems. Computer or ICT devices are not exceptions. Those who use electronic devices have noticed that an operating manual is given with every device. The manual contains a section on the last two or three pages, entitled, 'trouble shooting'.

Troubleshooting is the process of finding out the source of troubles. Usually some questions are given with solutions. The users, according to the nature of problems, solve it following the solutions.

In fact, trouble-shooting is a systematic process of identifying the source of problem in the ICT devices in order to solve it. In the manual, usually some possible problems and solutions in relation to the ICT device are mentioned. The users, following the basic trouble-shooting steps given in the manual, can usually resolve the problem in most of the cases. Usually the word 'Troubleshooting' is used for hardware related problems. Some troubleshootings are discussed below:



Sl nos.	Problems	General Solutions
1.	Computer is not starting up.	<ol style="list-style-type: none"> <li>1. Check the main power cable whether the connection is loose or not.</li> <li>2. Check whether there is power on the main power-board.</li> <li>3. If there is no power on the main power-board, change the main power supply unit.</li> <li>4. Take the device to the local service centre and consult an expert.service centre.</li> </ol>
2.	Nothing is viewed on the monitor though the system is running.	<ol style="list-style-type: none"> <li>1. Turn off the system and unplug the power cable from the main system.</li> <li>2. Remove the RAM from the slots.</li> <li>3. Clean up the connectors of the RAM rubbing with an eraser.</li> <li>4. Clean up the slot of the RAM with a hard brush.</li> <li>5. Turn on the computer without installing the RAM, and notice whether you get any beep sound.</li> <li>6. If you get any beep sound, turn off the computer, and again turn on after installing the RAM.</li> <li>7. If you get any beep sound, you have to understand that the RAM is faulty.</li> <li>8. Install a new RAM if there is no display yet.</li> <li>9. Install the RAM, and check again. Faulty RAM is the reason for at least half of the display problems.</li> </ol>
3.	The system becomes very heated, and abruptly shuts down.	<ol style="list-style-type: none"> <li>1. Open the Casing.</li> <li>2. Remove the CPU or processor fan from the motherboard, but don't remove the processor.</li> <li>3. Perhaps the heat sink is filled with dust that creates obstruction on the free flow of air. As a result, CPU can not be cool.</li> <li>4. Clean up Heat sink and the fan, and install again. Now, after closing the cabinet, turn on the computer again.</li> <li>5. If the problem is not solved, take the computer to a service centre, and talk to an experienced mechanic.</li> </ol>

Sl nos.	Problems	General Solutions
4.	The computer shuts shown on its own at every few minutes, but it is not heated.	<ol style="list-style-type: none"> <li>1. Check the mother board carefully and find out if there is any leaking or faulty capacitor has got loosened. Tighten the capacitor and the problem will be resolved.</li> <li>2. Notice very carefully as the computer is running whether any IC or any other component producing extra heat. Be cautious. Let not the board be shorted. If it happens, go to the nearest service centre.</li> </ol>
5.	The device hangs while running the Windows.	<ol style="list-style-type: none"> <li>1. Check whether there is any virus in the hard disk by running an upgraded anti-virus.</li> <li>2. Taking the back up of important data from the disk, format 'C' drive, and install Windows fresh. It should be done with an expert.</li> </ol>
6.	Display hangs when the power button is turned on.	<ol style="list-style-type: none"> <li>1. <b>1st Step:</b> Turning off the power button and opening the caching, remove carefully the data-cables and power-cables connected to hard disk, CD-ROM, and DVD, and after reconnecting the cables, restart the computer. If the problem persists?</li> <li>2. <b>2nd Step:</b> Check RAM, processor, power supply connection separately whether they are faulty or loosely connected. If the problem persists?</li> <li>3. <b>3rd Step:</b> Check the motherboard using the processor, RAM Hard disk and other related equipments from an active computer. If it is not active, change the motherboard. Get the job done by an expert hand or taking the computer to a service centre.</li> </ol> <p><b>Note:</b> Sometimes this problem persists when the keyboard and the mouseport of the motherboard are loosely connected. Set the connection properly.</p>

Sl nos.	Problems	General Solutions
7.	The computer repeatedly acts frozen, and reboot automatically.	<ol style="list-style-type: none"> <li>1. If the cooling fan set over the CPU does not move or cool the system properly, this problem occurs. In that case, switch off the power, and opening the cooling fan, check it out. If the fan is faulty, replace it. Besides, check the fan behind the CPU while the computer is running.</li> <li>2. The problem persists if the computer has any virus. Clean up every drive of the hard disk by running an upgraded anti-virus. Besides, it happens due to the installation of new hardware or programme. In that case, uninstall the programme and run the computer.</li> </ol>
8.	Getting electric shock when you touch the metal part of the computer.	<ol style="list-style-type: none"> <li>1. If you get electric shock touching the metal part of the computer, it is certain that the computer has not earthed. Calling a skilled electrician, get the computer properly earthed.</li> </ol>
9.	The date of the computer is not rightly viewed all the time or if any option of the BIOS is changed, it is not properly saved.	<ol style="list-style-type: none"> <li>1. If the CMOS (Complementary metal-oxide semiconductor) battery of the motherboard loses power, this problem occurs. In that case, set a new CMOS battery on the motherboard.</li> </ol>
10.	Showing message 'Boot Disk failure' or 'Hard disk not found'.	<ol style="list-style-type: none"> <li>1. Switching off the power, open the casing, and check the data cable connected motherboard and hard disk drive, and check the connecting point of the power cable from power supply unit to hard disk and properly connect it.</li> <li>2. Set the jumper properly following the jumper setting diagram on the back of the hard disk.</li> <li>3. Entering the BIOS, check whether the hard disk is detected from the options of the BIOS either manually or automatically. If the problem is not resolved, connect your hard disk to a sound computer and check whether it works or not. If the problem persists, buy a new hard disk and install the programmes you require. Get the job done by an expert hand.</li> </ol>



Sl nos.	Problems	General Solutions
11.	Showing messages like 'Out of memory' or 'Not enough Memory'.	<ol style="list-style-type: none"> <li>1. Usually these messages are shown when you install excess programmes, and work keeping a lot of programmes open.</li> <li>2. If the computer does not have sufficient memory for installing excess programmes, this problem occurs. Additional RAM can be installed in the motherboard to resolve the problems.</li> </ol>
12.	The keyboard is not working.	<ol style="list-style-type: none"> <li>1. Shut down the computer, and check whether the keyboard is properly connected to the port.</li> <li>2. If it is not properly connected or the connection is found loose, refix it and turn on the computer again.</li> <li>3. Clean up the virus running anti-virus software.</li> <li>4. If the problem is not fixed yet, install a new keyboard.</li> </ol>
13.	The mouse is not detecting anything.	<ol style="list-style-type: none"> <li>1. Check the connecting-cable of the mouse to the computer, and check again refixing it.</li> <li>2. Change the port to see whether it works.</li> <li>3. Connecting a new mouse to the port, check it again.</li> <li>4. Entering the BIOS check whether the mouse is disabled. If so, enable it, and come out of the BIOS.</li> <li>5. If the problem persists, connect a new mouse to the computer. The problem will be resolved.</li> </ol>
14.	No power is viewed on the monitor.	<ol style="list-style-type: none"> <li>1. Be sure whether the power button is turned on.</li> <li>2. Check the AC power cord connected properly to the power outlet behind the monitor.</li> </ol>

Sl nos.	Problems	General Solutions
15.	The power of the monitor is viewed on, but there is no display on the monitor.	<ol style="list-style-type: none"> <li>1. Check the video cable whether it is properly connected to the computer or not. If the other point of the video cable is not permanently connected to the monitor, fix it firm.</li> <li>2. Adjust Brightness and Contrast.</li> </ol>
16.	The printer is not giving any printing output.	<ol style="list-style-type: none"> <li>1. Check the power cable connected to the printer.</li> <li>2. Check whether the button of the printer is turned on.</li> <li>3. Check if the data cable of the printer connected properly to the computer.</li> <li>4. Opening the cover of the printer, find out whether any paper is jammed inside the machine.</li> <li>5. Check whether the cartridge contains any ink. Remove the cartridge, and fix again after shaking it well.</li> <li>6. If red or yellow blinking light is shown, press the reset button of the printer.</li> <li>7. If the problem is not resolved, install the driver software supplied with the printer.</li> <li>8. Consult an experienced hardware expert.</li> </ol>

### Group Activity

Discuss what other problems a computer may have besides the ones listed above. Identify some solutions to these problems.

### Exercise

1. What happened when the number of temporary files increases?
  - A. Computer runs slow.
  - B. Computer runs fast.
  - C. Antivirus does not work.
  - D. Internet-access is denied.
2. Which programme runs fast while installing a piece of Software from CD, DVD or Pendrive?
  - A. Set up
  - B. Autorun
  - C. Read me
  - D. Restart



## Third Chapter

### The Internet in My Education



**After completing this chapter, we will be able to:**

- Explain the concept of digital content;
- Explain the significance of the Internet in education;
- Identify the fields of using the Internet in academic curriculum;
- Explain the importance of ICT in career development; and
- Make a presentation on a topic you have studied with the help of Internet.



## Digital Content

If any content is preserved, expressed or exchanged as digital data, that is digital content, however it can be preserved either in digital or in analogue system. Digital contents can be exchanged either as files of the computer or of the digital system. Written information, images, sounds or videos everything could be digital contents.

### Types of Digital Content

Any information, image, sound or everything expressed through digital media are digital contents though it can be divided into four major categories:

- Text or written content;
- Image;
- Sound or audio and
- Video and animation.

**Text or written content:** The written content is still voluminous in digital media. It includes all kinds of written information, such as essays, blogposts, list of commodities and citizen's charter, prices of commodities, e-paper, reports, etc.

**Image:** All kinds of pictures, photographs, sketches, computer images such as illustrations, cartoons, info-graphics, animated pictures are the contents of this sort.

**Sound or audio:** All the contents of sound or audio are included in this content. Any kind of audio file along with the broadcast on the Internet and webinar are audio content.

**Video and animation:** Any kind of video and animation is its content. The volume of video content is increasing day by day, as nowadays mobile phones also have the ability to record video. Similarly, the volume of video content in the Internet is gradually increasing for the video sharing site like youtube. Besides, direct airplay of some events is very frequent on the Internet. It is called 'Video Streaming' which is also regarded as a video content.

### E-book

E-book or electronic book is the electronic format of the printed book. As it is published through electronic medium, sound, animation, etc. can easily be added to it. This books can only be read either by using computer or e-book reader. Kindle of Amazon.com is the most popular of all e-book readers.

### Benefits of Using E-book

1. Information may be accessed instantly by downloading e-books.
2. E-books do not require any library or specific space for storage. They can easily be saved and stored on a computer or in a reading device.
3. E-books are easily transferrable.
4. It is easy to find out information in e-books.
5. As e-books can be purchased through Internet, they do not incur any shipping or packaging costs.
6. E-books are easy to distribute and sell.
7. E-books can be printed out according to individual demand, and hence, they are financially more viable.

Nowadays, different kinds of e-books are found. Different publication requires different e-book format. Usually e-books are divided into the following five categories:

- Exact copy of a printed version: These books are like the printed version of a book. It is published in the pdf (portable document format) format. The complete text or parts are available on the internet.
- E-books that are only readable on the internet: These books are usually published in the HTML. This is called the website of books.
- E-books like printed version with some additional facilities: In these books, the readers have the facilities to comment, to know word meaning. Most of the books are published in (EPUB) format. These books are possible to read by using special device, for example, ibooks compatible fields and ibook reader, but field and ibook reader have their own format.
- Smart e-book: Audio, video, animation, etc. are included in these books besides the written part. These books are called smart-e-books. Its content is enriched with interactive multimedia features. For example, there are quizzes, spaces to answer the quizzes, and options to check the answers. 3D images are added to these e-books. However, some e-books are formatted in such a way that they can be accessed with a specific electronic device and hardware. For example, ibooks created by Apple computers can only be read with ipad or mac computer.
- Apps of e-book: The e-book itself is published as an apps on the computer or on the mobile phone. E-book, like the printed version, is published under the Copyright Act.

## The Internet in Education

We discussed 'e-learning' in a previous chapter where we showed how education and training can be imparted by using radio, television, CD-ROM, personal network, the internet. In this chapter, we will have discussions especially on the role of Internet in education.

Now you are very much familiar with the word 'Internet'. Many people are using the internet. This technology has brought about a significant change to the world, and some infrastructural facilities and financial solvency are required to use it. Either a desktop or a laptop computer is necessary to use the internet. It is expensive and cannot be afforded by the majority of the population. Nowadays mobile phone technology has been upgraded and 'Smartphone', which can provide the internet facilities, is within the reach of most people. However, the smart phone is not always an effective tool for educational purposes. The screen of the mobile phone is so small that its use is confined within the limit of viewing and exchanging information. A recent invention, tablet – an electronic device typically smaller than a laptop, but larger than a smartphone, can be used in education easily. Many companies are designing applications suitable for tablet to use in education.

We can not avail of the internet facilities just having the desktop, laptop, tablet or smartphone suitable for the internet-use. An internet connection is required for that, but it is not equally available in all the places of the country. The speed is not the same even. Sometimes a slow-speed internet makes its use meaningless. On top of it, fast and high speed internet service cannot be afforded by the general people of our country. Therefore, the students should get the internet connection at low cost to use it in education.

Our students' access to laptop or tablet and high speed internet will not ensure the use of ICT for their education. The main question is what what they will use in the internet. Is there any content suitable for them? In fact, there is not much content available on the Internet in the Bangla language. Initiatives have been taken by the Government, organisations, and individuals for developing content in Bangla. We expect to get it very soon in the internet.

Many educational contents are now available on the internet. If any student can not understand anything while studying, he/she is sure to get any solution by giving a search on the internet. If any student wants to learn anything, he/she will find it on the internet. The technologists of our country have successfully

made effective search engines.

There are useful websites for mathematics on the Internet in which the answers of any mathematical problem can be solved. There are websites for watching practical of scientific experimentations. Expertise groups are formed with enthusiastic people, and when problems are placed before them, they solve it. There are also some useful sites available on the Internet for teaching Bangla.

A vast world of knowledge on the Internet is still unexplored. When we start exploring it, we will discover a completely new world.

### **The Internet and My Academic Subjects**

Perhaps you hear that a teacher is like the flame of a light, and in darkness, they kindle the light of knowledge that illumines everywhere and the students see the ways in the light and learn what they want to. In other words, the best teachers in the world can not teach anything, but they can only help the learners and they themselves learn everything.

Similarly, access to and good content on the Internet will not always ensure great learning experiences and sound education for students. Internet only provides them with the opportunity to open a new world of knowledge. It depends on the students themselves how much they learn from it. You must have come across students who waste time on the Internet, either by playing computer games and being engaged in social communication sites. By contrast, some students learn computer programming availing of the opportunity.

You have certainly noticed that all of your textbooks are available on the internet. In the beginning of the year, you get the textbooks, but if any book is either lost or damaged for some reasons, you can download it from the internet.

#### **Activity**

How can the blind people be benefited by using digital content? Write a report within 1000 words taking help from the Internet.

You will be pleased to know that some enthusiastic educationalists of our country have started making oral versions of the textbooks in soft copies, so that the blind students can be benefitted from these oral versions.

NCTB publishes all the textbooks and sends it to you free of cost. Besides, many supporting books are also written (we are not talking of the guide books that actually do not contribute to learning). Those who write these textbooks upload them on the Internet. Students can download these books directly from the internet without purchasing from the market. Many writers of the world

have arranged their books available on the internet. If you surf the internet, you will get your favourite books free of cost. However, you should be cautious about downloading any book preserved online, keeping in consideration the Copyright Laws.

We know that our students are not satisfied with what they get in the textbooks. Therefore, they open science, mathematics or literary clubs. Once, students could participate in the activities of the clubs physically, but now they access the clubs virtually open on the Internet. Now students of the whole world can participate in the activities of the clubs and increase their academic competence.

### My Career and ICT

In future, it will impossible to think of a day without ICT. Because of the multifarious use of ICT, it will become an important factor in appointing employees or establishing new business firms.

You should be careful to develop expertise in ICT for your own career. It will be simply impossible to get any job without having preliminary skills in office software, internet, e-mail, social networking system, etc. The demand of programming, designing website, expertise in specialized job like the security of computer, etc. will increased. Therefore, the prospect of ICT as a career is undoubtedly bright. You should give effort in enhancing the skills in ICT henceforth. ICT is a great field for developing career in the world. Computer is the main requisite of ICT. The potentiality of ICT in providing new avenues for numerous computer-related jobs is beyond imagination. Computer science, computer engineering, office automation system design, artificial intelligence, robotic engineering, mobile communication, data communication – these are only a few of the thousand possible sectors that lead to successful career in ICT.

The wide scope of programming is extending in Bangladesh like other countries. The demand of programming is high right now. Everything is being computerized. Programmes are made by software. Different applications of smartphone are created by programming. The technology advances so quickly that one day the television, refrigerator, air-condition, etc. of home would be controlled staying at office. The symptom of diseases can be detected by the mobile devices. The size of electronic devices are getting smaller, but their efficiency and performance are increasing. It will gradually increase. The control of everything including kitchen to satellite will be within the reach of



human being. All will be controlled through computer programming.

The efficient programmers of our country are now working for the world famous companies like Google, Microsoft, Intel, Facebook, etc. on freelancing sites. Besides, skilled programmers can open software farms if they want.

Programming as a profession has a special importance. There are wide scopes to prove one's efficiency through participating in different online programming contests. Thus these contests have created opportunities for university graduates from Bangladesh to work in the universities of Bangladesh, opportunities have been availed such as Microsoft, Google, and Facebook. Every year, many students of our country by using their talents make strong position in these renowned companies. In most of the cases, they do not need to apply for the job. These companies find out skilled programmers from different countries.

There are other job facilities especially available in the ICT sector. It provides the scope of doing office from home. The renowned companies in developed countries, because of unavailability of skilled workers in their own countries, offer job opportunities to the skilled workers in developing countries. The workers of our country are of global standard. Now the programmers and other ICT professionals of our country are working through the Internet for the renowned companies of America, Canada, Britain, etc.

Patience is required for working freelance, and proficiency in the English language is necessary for communication. Besides, ICT provides opportunities for working in computer network. The companies using servers of their own need experts for developing computer network and maintenance. That is why it has a very good prospect in job market. The demand of ICT increases day by day in this age of information and communication technology. It is forecasted that the demand will be doubled by the next 2-3 years.

Some software companies have already been established in Bangladesh. They are exporting their software and mobile apps to other countries of the world. It is an honour for us. The younger generation is entering the profession. This sector needs more skilled workers in future. Therefore, the prospect of ICT as a career is undoubtedly bright. You should try to enhance your skill in ICT considering all these factors.

- ## Which one is correct?

6. How can ICT be helpful for building up our career? Explain.
7. 'Now it is impossible to study without the help of the Internet,' explain with supporting argument.

## Fourth Chapter

### My Writings and Accounts



5/3/1											
1RM Calc				Rep Calculator				Cycle Increment			
Weight	Reps	1RM		Weight	1RM	Reps	Reps				
Cycle 1											
Week 2				Week 3				Week 4			
1RM	Weight	Rep Goal	1RM Goal	1RM	Weight	Rep Goal	1RM Goal	1RM	Weight	Rep Goal	1RM Goal
	Military				Military				Military		
	Deadlift				Deadlift				Deadlift		
	Bench				Bench				Bench		
	Squat				Squat				Squat		

**After completing this chapter, we will be able to:**

- Explain the important aspects of word processor;
- Describe the technique of using word processor;
- Explain the important aspects of spreadsheet;
- Identify the fields of using spreadsheet;
- Describe the technique of using spreadsheet;
- Edit by using word processor; and
- Keep the details of account by using spreadsheet.

## My Writings on Word Processor

Writing is a medium of expression. We have to write for different needs. It might be a piece of literature like poem, short story, novel, diary, etc. In our daily life, we have to maintain different kinds of accounts, both big and small, like expenditures of daily necessities, house rent and result sheet of examination, etc. Once, writing and keeping these accounts were very difficult, but now we have a lot of software for doing these works for the development of information and communication technology. These software are called office software. These software can be used in our desktop, laptop and smartphone. We have word processor for writing and spreadsheet analysis software. You have got preliminary ideas about these in the previous class. Now you will get advanced ideas regarding these topics.

Writing of anything means bringing the imaginary world to reality in words. We know the history that human beings started the art of writing to communicate their thoughts and their ideas and convey their imagination to others. Now ICT is being used in this work, and the importance of word processing is immense in this regard. Something written is required for receiving and presenting information on television, mobile phone or computer. Now all types of writing are done by the help of the word processor. The word processor provides lots of facilities in terms of writing.


- The writing job can be done correctly. Any correction in writing can be done immediately. Because of the varieties of editing options, any piece of writing can be presented aesthetically.
- A piece of writing can be presented in different ways, for example, by enlarging or shortening the font-size, colouring, making box, etc.
- There is the facilities of inserting new paragraphs, deleting parts or rearranging the whole writing without composing the piece of writing from the beginning.
- A document can be more attractive by inserting photographs, graphs, tables, charts, etc.
- A document can be saved and used again at any time. The same work need not be done repeatedly.
- Any part of a document can be copied to another one if necessary.

- It is possible to work with several documents simultaneously.
- By using find-replace command, a word in a big document can be found and replaced quickly.
- When a document is needed to use repeatedly, it can be saved as template to avoid the wastage of time. For example, if it is required to prepare lab-report every week, it can be saved as template to use again and again.
- In a large document, such as, in a research paper, tables, references, images, bibliography, etc. can be inserted and edited within a very short time.
- Spelling errors can be corrected easily by the spell-checker. Automatic correction of spelling is also possible in the word processor with its built-in programmes.
- It is possible to print a document as many times as required by saving it.
- A document can be sent to any destination through the medium of electronic communication.
- Files prepared in word processor can be preserved easily.
- Files, an indispensable part of the modern office management, has become easier for the word processor.

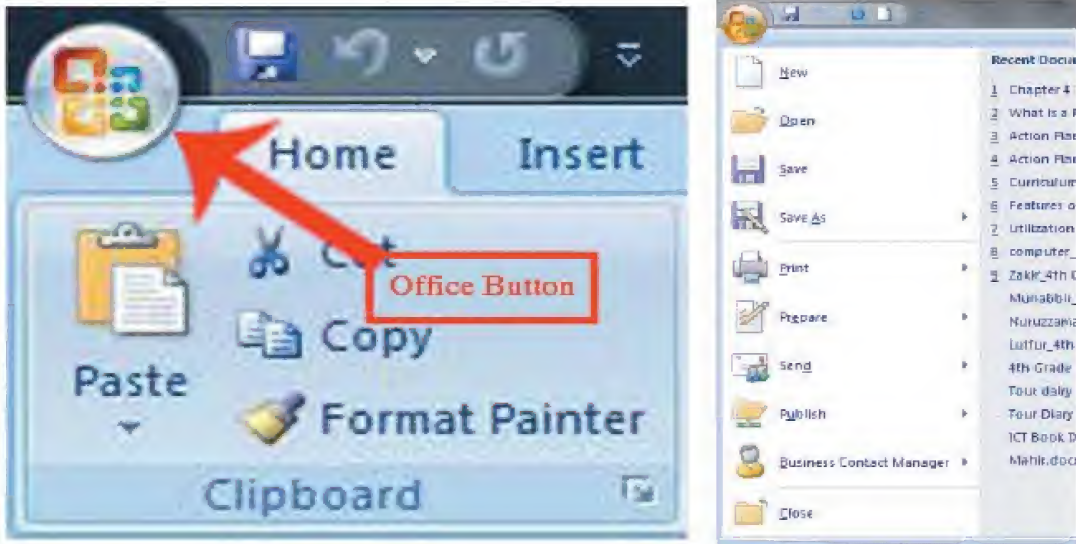
Besides, the word processing software provides more facilities. The number of users are gradually increasing day by day for its usefulness.

In the previous class, you learnt the process of creating and opening new document in word processor. Now we will learn some new techniques for which you need to use your previously earned knowledge and skills.

### Office Buttons and Its Options

A new window will open after running word 2007. This  icon at the left corner above this window is the office button. The options you will find by clicking the button are shown in the following image:





The following options are most important:

**New:** This button is to be clicked for opening a new document.

**Open:** It is to be clicked to open a document saved previously.

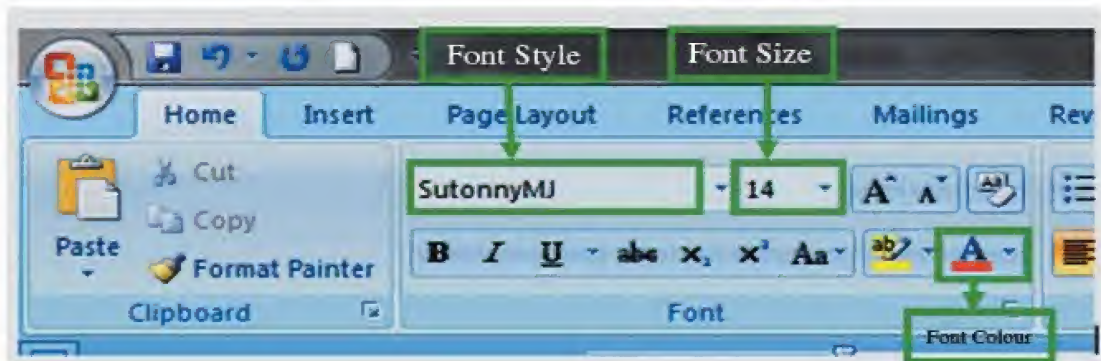
**Save:** To save a document, this button is to be clicked.

**Save as:** This button is to be clicked to save a document in several different names keeping the original one.

**Close:** This button is to be clicked to close an opened document.

### Formatting Text: Selecting Font Style and Colour

You have already learnt how to write using a word processor. What will be the impression if an organised piece of writing is presented in a colourful way? Certainly, it will look good. This task is called 'Formatting Text.'



There are letters of different styles in a word processor. Those are called 'Font'. In formatting a text, selection of font comes first. This selection is done from the name of the font of font group from the drop-down box on the home-menu. Pick the font that you like out of numerous fonts. Sometimes, it is required to use fonts of different styles either to highlight or specify words or phrases. In that case, the requisite section of writing, select the font in the similar way. Click the number from the dropdown box at the right side of font box to determine the font size. You can select the font colour as you like. Clicking on the icon of the dropdown box of font group, the colour can be selected. There are more facilities of fonts in the font group of home tab.

### Activity

Composing a paragraph from your textbook in the word processor, format it by using different font style, size and colour and finally save the document giving a name.

## Formatting Text: Bullets, Numbering and Line Spacing

### Our Fruits

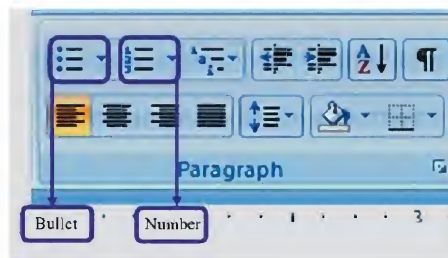
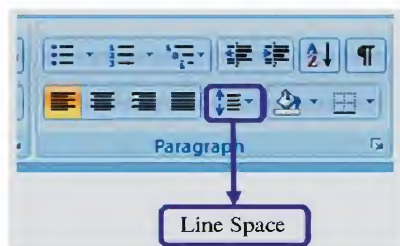
- Mango
- Blackberry
- Litchi
- Jackfruit
- Coconut

### Our Rivers

1. The Padma
2. The Meghna
3. The Jamuna
4. The Surma
5. The Bhairab
6. The Tista

Sometimes we make lists of different things, and use either signs, or letters or numbers to maintain serials. This is called bullets and numbering in the word processor.

There are icon command of bullets and numbering in the paragraph group of home tab.



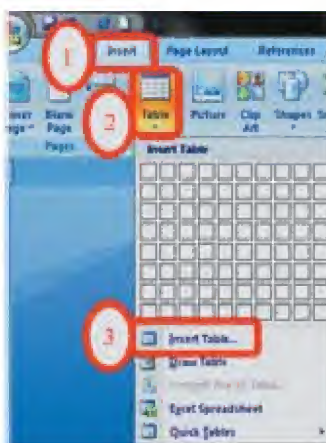
**Line Spacing :** This tool is used to determine the space between two lines.

**Activity**

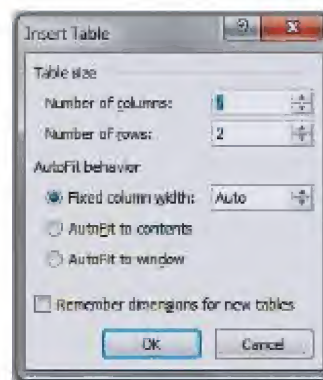
Write down the names of some of your favourite cricket players by using bullets and numbering.

**Formatting Text : Table and Different Illustration**

The insert tab of ribbon is used to insert a table, image, clip art, different shapes, chart text box, word art, etc. into a document.

**Insert Table**

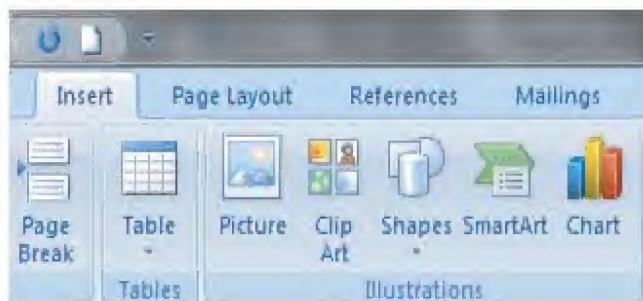
Click the (1) Insert tab on the ribbon of word 2007 to add a table. (2) Then click table and click (3) Insert table. You will get a dialogue box where you have to select the number of columns and rows.

**Activity**

Make a group of 10 students, and arrange the name, father's name, age and roll number of each student in a table.

**Insert Picture**

By inserting picture document can be presented in attractive way. For example, you are watching a lot of pictures along with writings in this text. You have to click the insert tab of the ribbon of word 2007. Then click the picture icon of illustration group. A dialogue box will come. Select a space for the picture and the picture will be inserted into the document. Besides,



A dialogue box will come. Select a space for the picture and the picture will be inserted into the document. Besides,

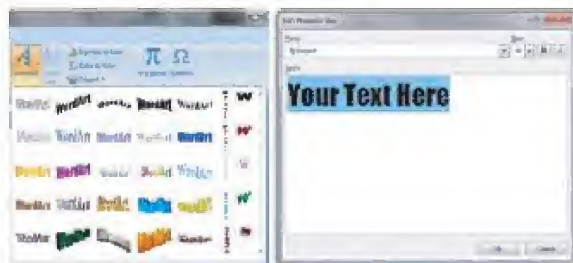


facilities of inserting clipart, shapes, smart art, chart, etc. are provided in the illustration group.

### Activity

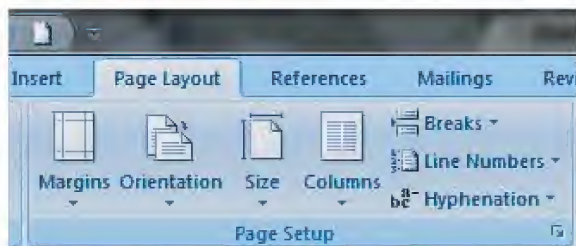
Insert a picture in the document prepared by you with the help of your teacher.

## Insert Word Art



You can insert fonts of different styles from the insert tab, and to choose your style, you have to click word art of insert tab's text group. A dialogue box will come, and you will get the desired style of your text after selecting the font.

## Setting up Margin



It is required to click the page layout tab of the ribbon to determine the margins of the text. Then clicking the margin icon, desired margin is to be set. Different options of margins will be on the screen

when you click on the margin icon. You can select the margin from the options or use your own margin clicking the custom margin.

### Activity : 1

Render the name of your school in different styles of word art.

### Activity : 2

Set the margin after preparing a document.

## Line Spacing of Paragraph

Click the page layout tab to select the space between lines of a document. It is needed to select the points before and after lines inspacing of



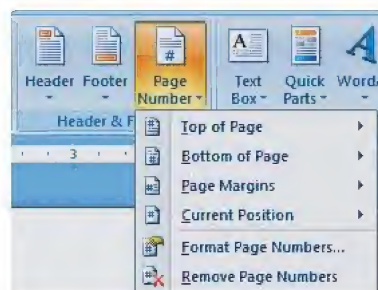
paragraph group. The command can be given after composing the document. In that case, first the section of the document in which line spacing will be inserted should be selected. Then it can be determined as per the instructions given above.

**Activity**

Compose a part from either from your Bengali or English textbook and determine the line spacing.

## Insert Page Number

Inserting page number on every page is an important task while composing any document. Clicking the page number of header and footer group in the insert tab on the ribbon, the right option can be chosen. You can insert page number either on the top or at the bottom of the page.

**Activity**

Save a document composed by you giving page number.



## Spreadsheet and My Accounts

### Analysis of Spreadsheet

You are very much familiar with the use of spreadsheet in class VIII. Can you remember the specialities of this programme? Let us have a look again on what the specialities of spreadsheet analysis are.

**Specialities of Spreadsheet Analysis:**



- It is possible to work with statistics and letter-based data;
- It is advantageous for any kind of accounts;
- Classification is easier for the rows and columns;
- It is possible to work with voluminous data by using formulae;
- Analysis of data can easily be done by using different functions methodically;
- Data can be presented with impressive graphs, charts, etc.

### Different uses of Spreadsheet

A spreadsheet is an interactive computer application software used for organisation, analysis and storage of data in tabular forms.

Different uses of spreadsheet are given below:

1. analysing exam results in the education sector;
2. maintaining income and expenditure accounts;
3. preparing budgets
4. maintaining records of employee salaries
5. making reservations for services, such as airlines
6. calculating and analysing income tax
7. counting votes in elections
8. analysing and evaluating performances of players

## Technique of Using Spreadsheet

You have already got some fundamental concepts of spreadsheet. You will get advanced ideas in this book.

### Multiplying

Put formula in the result cell for multiplying in spreadsheet. Formula always start with "=" equal to. Multiplying process is of two kinds:

	A	B	C	D
1	Monthly Shopping Expenditure			
2	Product Name	Price (tk)	Quantity (Kg)	Expenditure
3	Rice	44	40	1760
4				

1. Usually press the enter button, after putting the formula into the result cell.

2. Press enter button writing spreadsheet function= PRODUCT in the result cell and giving the cell range.

	A	B	C	D
1	Monthly Shopping Expenditure			
2	Product Name	Price (tk)	Quantity (Kg)	Expenditure
3	Rice	44	40	1760
4				

The facility of multiplying by using function is that the result of multiplication of numerous cells can be done by range, if necessary. The process of multiplying 3 cells is shown in the picture below:

	A	B	C	D
1	Volume of Cube			
2	Length	Width	Height	Volume
3	40	15	14	8400
4				

#### Activity

Opening a file of spreadsheet, multiply some imaginary data.

## Method of Dividing

Dividing can also be done on the spreadsheet by a formula. You have to write '=A1/B1' in the result cell to divide A1 by B1. Here the sign / is used as the sign of division.

	C3		$f_x$	=A3/B3
	A	B	C	
1	April 2014			
2	Monthly Income	Number of Days	Daily Income	
3	36000	15	=A3/B3	

### Activity

Try to find out the result by using the formula.

## Calculation of Percentage

How much is 15% of Tk 400? What is the selling price at profit 16% at the purchasing cost Tk 1200? We frequently need to do these sorts of calculations in our practical life. We can do these calculations on the spreadsheet.

	C3		$f_x$	=A3*B3%
	A	B	C	
1	Tax Calculation			
2	Income	Tax Rate	Amount of Tax	
3	400	15	60	
4				

To solve the first problem by spreadsheet, put formula =A3\*B3% in the result cell. The process of writing the formula in the result cell by using keyboard is to write the sign = and click the cell where 400 is

written. Then press \* and click the cell where 15 is written. Then writing % (press shift key and 5), press enter button. You will get your result.

The formula =A3\*B3%+A3 should be used to solve the second problem. The process of writing this formula is similar to the process mentioned above.

### Activity

Solve the problems of calculating percentage under the guidance of your teachers.

The monthly basic salary of Mr. Chowdhury is Tk 16500. He draws residential allowance at the rate of 55% and medical allowance Tk 700. He subscribes Tk 90 to the benevolent fund. What is his monthly net salary?



### Exercise

1. Why is a document saved as a template?
  - A. For Aesthetics
  - B. For frequent use
  - C. For rearrangement
  - D. For the facilities of making copies
2. Which one of the following is used for saving the document for the first time?
  - A. New
  - B. Open
  - C. Save
  - D. Save As
3. Using spreadsheet analysis\_
  - i. preparing text is easier.
  - ii. theory can be applied.
  - iii. data can be arranged.

Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

**Read the section below, and answer the question nos. 4 & 5:**

Soumitra writes on nature and environment for newspaper voluntarily. Sometimes he has to attach picture of flowers, birds, or rivers. He is an accountant by profession. He has to keep the account of the employee and place monthly report.

4. Which software Soumitra has to use for his voluntary work?
  - A. Word Processor
  - B. Spreadsheet
  - C. Graphics
  - D. Database
5. In his professional work, Soumitra has to use \_
  - i. The template.
  - ii. Theory.
  - iii. Data arrangement.

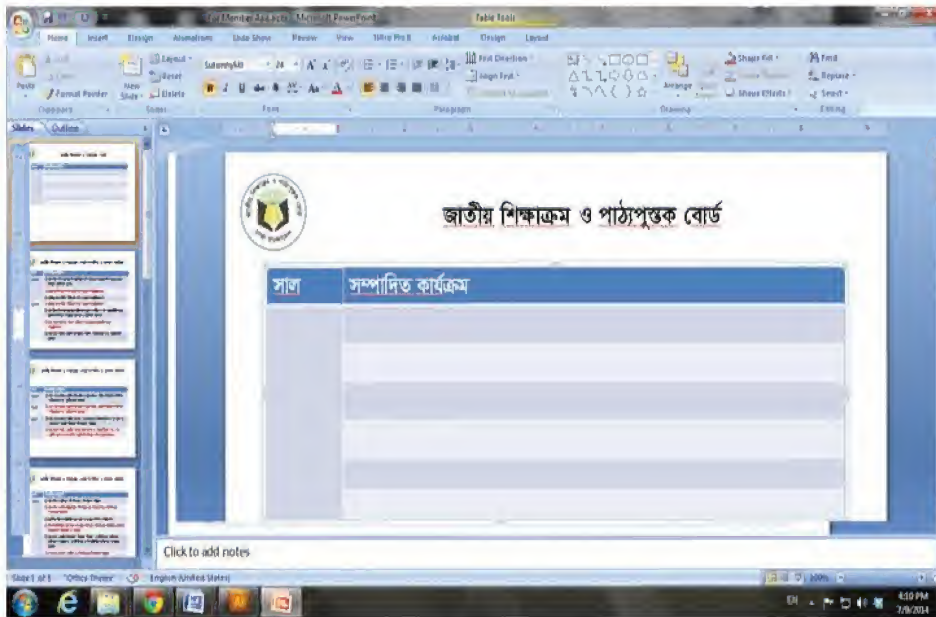
Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

6. What kind of formatting is used in word processor for making a list? Describewith examples.
7. Write five advantages of analysing spreadsheet.

## Fifth Chapter

### Concept of Multimedia



**After completing this chapter, we will be able to:**

- Explain the concept of multimedia;
- Describe the method of multimedia;
- Identify the fields of using multimedia;
- Explain the idea of presentation software;
- Analyse the significance of presentation software;
- Describe the technique of using presentation software;
- Explain the idea of graphics;
- Describe the technique of using graphics software;
- Make subject- oriented slide by using presentation software and present it; and
- Draw creative pictures by using graphics software and present it.



## Multimedia and Graphics

Human beings have been using different media to express themselves since the ancient time. Writing is an expressive medium, so are the sound and image. Multimedia is the integration of multiple forms of expressive media, such as texts, graphics, drawings, photographs, videos etc. With the evolution of civilisation and development in technology, these mediums have been used in various ways. Specifically in today's digital era, the nature of these mediums has also changed.

The media of the analogue age are not the major media of the digital age. Rather the media of analogue age have been using in a new dimension. Once the media were used separately, but nowadays they are harmoniously combined together. The potentiality of multi-media has enhanced with the integration of programming ability of digital machines. Hence, it is also called 'interactive multimedia' because of its multiple dimensions and different programming abilities. Interactive multimedia is widely known to people. In one word, multimedia means numerous media. Interactive media means the media with which the users can connect and interact.

Multimedia is the combination of different expressive media. We express ourselves by using, at least, three media which are colour, image and sound. These three media have various forms too. They appear before us either individually or collectively. Different kinds of media are known to us as paper publication, radio, television, video, cinema, video games, educative software, webpage, etc. We can call television-video-cinema multimedia, but video games, educative software, and webpage are called interactive multimedia.

Multimedia is usually captured by a digital machine or device. It can be directly presented on the stage or projected in a different way. Sometimes some electronic devices are called multimedia to capture the subjects and or directly broadcasted in different forms. If we want to use three media in one activity, we should start from cinema. In the last phase of 19th century, in 1895, with the invention of cinema, text, graphics, sound and movement were added to it. Therefore cinema is called the earlier invention of multimedia. Even though this form of multimedia came into being ages ago, the integration of computer to it a quite a recent development.

## Mediums of Multimedia

We know that computer, the most popular digital device is widely known as

the calculating machine. Processing and transferring data was another important work of computer. Later on, it was widely used for typing.

In the beginning, only one medium was used to do all these works, i.e. text. However gradually graphics and sound have been added to it. Besides, the computer has the ability to do programming. In fact, computers are capable of creating an interactive experience for users with the combination of text, graphics and sound. Now multimedia promised dynamic experiences than that of the previous time. Multimedia is used not only in computer, but also in mobile phone, Smartphone, tablet, and other digital devices.

### The main mediums of Multimedia

There is a well-wide preferences for computers and they tend to replace the conventional machines.

1. **Text:** Any work is relation to written text is world-wide done on computers. Once it was done by the typewriter. At present, computers are used for all kinds of writing tasks in offices to professional printing houses.
2. **Graphics:** Computers are used for graphics design, editing, and so on. In our country, the use of computer is very limited in graphics design, painting, drawing, and even in commercial graphics included in Fine Arts. However, computers are widely used in printers and packaging industries. The use of computer started in 1990s in printing, publication and graphics design. It was first used in editing scanned photos by Photoshop. Gradually, computers have been used in design and graphics.
  - 2.1 **Video:** Video is a kind of graphics. It is better to call it a moving graphics. Video is an established medium all over the world. Video has been extensively used in TV, Home Video, Multimedia Software, Web, etc.
  - 2.2 **Animation:** Animation is a kind of graphics. But it can be either moving or static. It can be either 2D or 3D. The use of animation is gradually increasing in our country. In advertisement, animation is a favourite media, but we lack skilled people in this sector. In fact, animation is never used as a single medium. It is combined with with audio, video, text, graphics, etc.
3. **Sound or Audio:** The whole world depends on computer for sound or audio recordings, editing, etc. Analogue system has completely been obsolete in sound engineering. Now sound recording can easily be done in computers.

## Use of Multimedia in ICT

There is an increased use of multimedia in ICT.

**1. As teaching aid :** The use of multimedia as a teaching aid is widely used. The learners will understand a topic easily if multimedia is used in the class room. The teacher can easily make the lesson effective and interactive. Besides this, there are multimedia software for education.

**1.1. Multimedia Software :** The multi-media software has just started being made in Bangladesh. Multimedia technology has been used in with 'Bangladesh-71', 'Abosor', 'Biswakosh', 'Namajshiksha', 'Bijoy Shishushiksha', etc. They are not much interactive. However, we expect that in Bangladesh, multimedia software will be definitely developed extensively in the 21st Century.

**1.2. Digital Publication :** Our publication is still paper-based, but 21st century will definitely be the century of digital publication.

**2. Entertainment :** Multimedia is widely used in most of the genres of entertainment. Cinemas and plays are being made livelier by the special effects of multimedia.

**3. Advertisement :** Because of the use of multimedia, advertisements have become attractive. Both real and fictional elements can be shown in advertisements with the help multimedia.

**4. Games :** Multimedia is extensively used in computer games or video games. Because of the use of multimedia, the games seem as real as real life.

The man who works with text, graphics, audio, video, animation, etc. is called the multimedia contents developer. Many pieces of software like Adobe Photoshop, 3D Studio Max, Maya, etc. are used for multimedia contents. However, depending on the content that they develop and the interactive applications that they use, multimedia contents developers should be called 'multimedia programmers' or 'multimedia authors'. In fact, there is a difference between developing contents and adding interactivity. Adobe Premier and Adobe Photoshop can make an interesting piece of multimedia content. By contrast, in order to make the multimedia content interactive, 'Director', a programme of creating software, combines the media made in 'Premier' and 'Photoshop' and create an interactive application.

In this connection, we should know a piece of information about interactivity. Application of any style, such as Microsoft word scroll or flash, into the text or any effects of animation into the video does not make the text or video interactive. Something created by the powerful authoring software like 'Flash', 'Director', and 'Authorware' that makes interaction possible between the user and the computer is called 'Interactivity'.

In future, the demand and number of multimedia programmes will definitely never lessen. The demand of multimedia contents developers and programmers, along with business software developers and maintenance experts, is also increasing.

## Presentation Software

### Creating Presentation

It is the age of exchanging information and ensuring human welfare through free flow of information. Now, the exchanging of information among the researchers, educationists, social workers, professionals of national and international levels has been emphasized most. Meetings, seminars, symposium, workshops are frequently arranged in order to ensure free access to information. As a result, experts have up-to-date information about their respective fields.

Presentation software like Power Point, Pikasa, Impress etc. are mainly used to present information in an attractive and effective way in meetings, seminars, symposium, workshops. 'PowerPoint' is a piece of popular software or application of Microsoft Office. It is called 'Presentation Software' too.

Information can be presented attractively with texts, graphics, audio and video through Power Point. In fact, right at the moment there is some alternative to Power Point software. That is why it is widely used for presenting information in meetings, seminars, symposiums, and workshops.

As a word document in a Microsoft Word Programme, has numerous pages, a Power Point presentation also has several slides. A page containing more than one slides is called 'Handout'. A draft should be made for organized presentation in Power Point. This draft is called 'Slide Layout.'

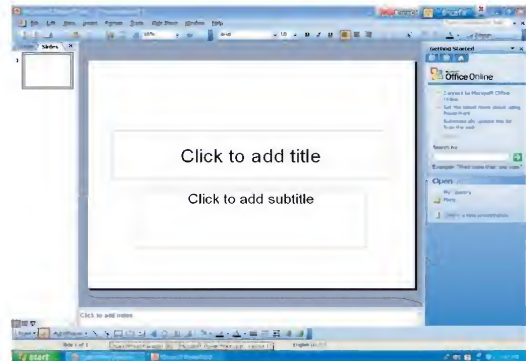
## Opening Power Point Programme and Creating Slides

To open Power Point Programme

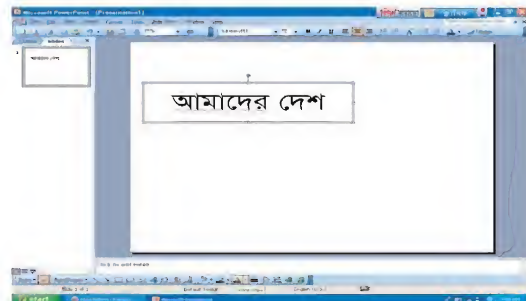
1. At the left corner below the screen, 'Start' is written. It is the 'Start' button.

2. Click the 'Start' button taking the mouse pointer on it, and a menu will be viewed on the screen.
3. Place mouse pointer on 'All Programs' command and get a 'Flyout' menu.
4. Click 'Microsoft Office' menu from this 'Flyout' menu and get the list of all the programmes of Microsoft Office on another 'Flyout' menu.

5. Select 'Microsoft Office Power Point' command from this list and the first slide will be shown on the screen. In the main part of the slide



- 'Click to add title' and 'Click to add subtitle' are written on the box. Click both the writings and a text box will be shown with the insertion pointer. Type title and subtitle while the insertion pointer is in the box. If you click outside the box without writing anything those two writings will be viewed again.
- Click the textbox border and press delete button after selecting, the textbox with the writing will be deleted.
- Select textbox icon from the ribbon of 'Home' menu and take the insertion pointer inside the screen and the insertion pointer will be changed into a text pointer. (create a box, dragging)
- The insertion pointer will be on the box.
- The keyboard will be transformed into 'Bangla' for typing in Bangla.
- Select font, fontsize, colour, etc. from the toolbar and ribbon for typing work.
- 'আমাদের দেশ' is typed selecting Sutonny MJ, font size 150 and blue colour.
- The textbox will remain selected after being typed. There will remain round and hollow selection points, four on the four arms of the selected box and four on the four corners. Dragging these selection points, the size of the box can be made small or big either sideways or from top to bottom to





contain texts. The selection will go away if you click outside the box.

- The box can be moved to any place of the screen by clicking any arm of the box and by dragging it.
- On the left side of the slide making window, the small version of the slide is shown in thumbnail view.

## Saving Presentation

- Give Save command from the file menu, and Save as dialogue box will come.
- Type the name of the file in Save as dialogue box. Suppose that the name is 'My Country.'
- Click the button 'Ok' in the dialogue box, and the presentation will be saved as 'My Country'.
- The file can be opened next time to complete the unfinished work.

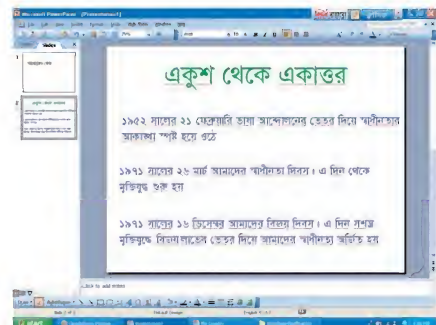
## Adding New Slide

Many slides may be included in a single presentation. To add new slide

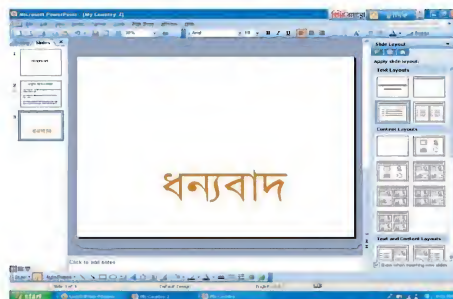
1. Select the command of 'New Slide' on the ribbon of 'Home' menu or Press Ctrl+M from the keyboard, a new slide will be added.
- 'Click to add title' and 'Click to add text' will be shown in the newly added slide. Both the writings will be deleted following the previous directives. The small version of the newly added slide will be shown on the left side of the Window in thumbnail view.
2. Type the title of the new slide 'একুশ থেকে একাত্তর' in the textbox following the process described earlier.
3. Following the same process, type the three titles in three different boxes:

১৯৫২ সালের ২১ ফেব্রুয়ারি ভাষা আন্দোলনের ভেতর দিয়ে স্বাধীনতার আকাজক্ষা স্পষ্ট হয়ে ওঠে ১৯৭১ সালের ২৬ মার্চ আমাদের স্বাধীনতা দিবস। এ দিন থেকে মুক্তিযুদ্ধ শুরু হয়

১৯৭১ সালের ১৬ ডিসেম্বর আমাদের বিজয় দিবস। এ দিন মুক্তিযুদ্ধে বিজয় লাভের ভেতর দিয়ে আমাদের স্বাধীনতা অর্জিত হয়



- The three boxes will be placed one after another from top to bottom. The title will be on the top. Another slide will be added following the process of adding the second one. That will be the third slide. To add this slide
- 4. Type 'ধন্যবাদ' as the title of the new slide in the textbox following the process described earlier.
- By adding numerous slides, complete the work of presentation as required.
- After preparing the primary presentation, adding different varieties make the entire presentation attractive.



## Display Slides in Presentation

Making two slides for presentation, check it whether it has been workable as well as presentable. For having the job done

- Press the button F5 from the keyboard or select Slide Show on the ribbon of View menu or click the icon of Slide Show on the status bar, the first slide of the presentation will be displayed.
- For viewing the next slide of the presentation, press the right arrow of the keyboard, and to go back, press the left arrow.
- For starting the next slide show from the middle of the presentation, press Shift F5 button.
- Press Esc button to revert to the window of editing from the window of slide show.

You can be sure whether the slides are presentable or not by watching at any phase of preparing the slides.

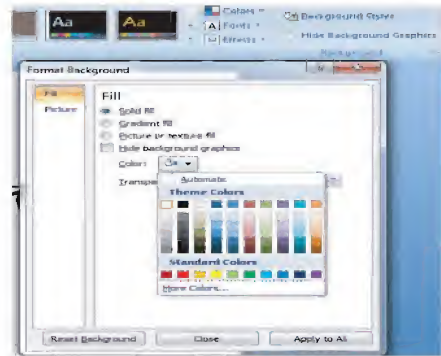
## Changing the Background of Slides

The color of background can be changed either during the processing or after the making of the slides. Any image can be used as the background of the slide.

## Adding or Changing Background to the Slide

1. Keep the slide open or active to add background to it. The first slide of the current presentation is kept open.

- If you click on the drop-down bar of Background Style on the right of the ribbon of Design menu, a palette of gradient and solid color will come on the screen. If the mouse pointer is placed on a color or gradient of the palette, in the original slide, the background of that color or gradient will be viewed.



### To use more colors, textures and images

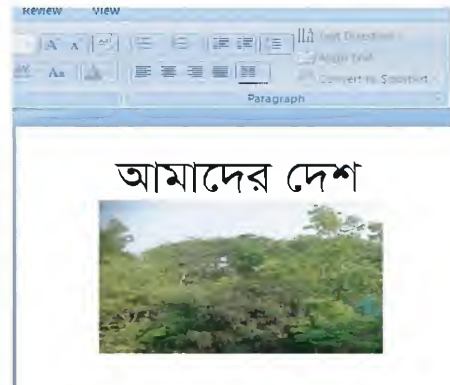
- Select Format Background at the bottom, and a dialogue box of that name will come on the screen.
- Clicking Solid Fill Radio button on the left above the Format Background dialogue box, make it active. Click Color Drop-Down Arrow, and a color palette will be viewed on the screen. The color swatch, which will be clicked from this palette, will fill the background of the slide.
- Clicking radio button of Picture or Texture Fill, make it active, and Texture drop-down will be viewed instead of color. Click this drop-down arrow, and different kinds of texture will be shown. The texture swatch, which will be clicked, should be selected from the original slide.
- The dialogue box called Insert Picture will come if File button below Insert Box is clicked as the radio button of Picture or Texture Fill is selected. Select picture opening the folder of the dialogue box that contains the picture.
- Click the Insert Box button of the dialogue box, and it will disappear, and the picture will be set as the background of the slide.
- To remove the imposed background  
Click the Solid Fill radio button of the dialogue box of Format Background and make it active. Click the drop-down arrow of Color, the palette will be viewed on the screen. Select White from this color palette.
- Click Close button of the dialogue box.

### Insert Picture in Slide

Sometimes, it may require to insert Picture on the slide.

To insert picture into slide

1. Click the icon of Picture on the ribbon of Insert menu, and the dialogue box of Insert Picture will come on the screen.
2. Open the folder of the dialogue box of Insert Picture in which the requisite picture remains, and after selecting the picture, click the Insert button. The selected picture will be added to the slide.
3. Clicking the resize box and dragging it, the size of the picture can be resized and replaced elsewhere if required.



### Inserting Transition into Slide

Usually slides are presented one after another, and effects are used to shift from one slide to another. This effect is called 'Transition'. It works on the slide into which transition is applied by keeping it open. To insert Transition into a slide

1. Keep the first slide open.
2. Click the Animations menu to activate it.



On the ribbon of Animations menu, a row of Transition sample will be viewed. The sample on which the mouse pointer is placed will be viewed in the slide. There are three arrows on the right to pick more from the given samples. If you click repeatedly on the middle arrow, a new row will be viewed with every press of the mouse button. If you click the arrow on the top, a column will come down the apex. If you click the arrow at the bottom, all the samples will be viewed. Click the sample chosen, and the transition will be applied to the slide.

3. If you want to apply the same transition to all the slides, click 'Apply to All' button on the right side after applying it to the first slide.

4. If you want to apply different transition to every slide, you have to apply it separately following the same process for every slide.

### Applying Transition Separately in Text

One slide may contain several textboxes. There are texts in three textboxes in the second slide of the current presentation. If different transitions are applied in these three textboxes, they will come to slide in three different processes. To insert transition to the textbox

1. Keep the second slide open.
2. Select the textbox.
3. Click Animations menu to activate it.

A command called Custom Animation will be added to the bottom of Animation. Click Custom Animation and a palette will come.

4. Select Entrance from Add Effect drop-down list of Custom Animation, and a list of custom transition will come. From this list
  - 'Blinds' is selected for the first textbox.
  - 'Fly in' is selected for the textbox.
  - 'Diamond' is selected for the second textbox.
  - If you select 'More Effects' from this list, another list of transition will be viewed. Selection of any transition from this list will show the same effect.
5. In order to remove a transition from a specific textbox, select it. Click the 'Remove' button to exclude the transition.

### Apply Sound to Transition

Keep the slide open to add sound to the transition, and select the name of a sound from the drop-down list of Transition Sound. Camera is selected for the first slide. Click Apply to All button for applying the same sound to all the slides.

If different sound is required to apply in every slide, separate application of sound following the same process for every slide will be needed.

### Add Video to the Slide

Video can be added to any slide if necessary. Usually video is added to the introductory slide. Suppose that video will be added to the introductory slide of the presentation of Our Country. For this



- Keep open the introductory slide of the presentation of Our Country.
- Clicking Movie drop-down on the ribbon of Insert menu, get 'Movie from file' command. Select the command and 'Insert Movie dialogue box' will come.
- A movie file will be selected from the video folder of the Insert Movie dialogue box.
- Click Ok button of the dialogue box.
- A message box with a question 'How do you want the movie to start in the slide show?' will appear.
- The Messaging box will contain two buttons 'Automatically' and 'When Clicked.'
- The Messaging box will disappear if required button is pressed, and the video file will be added to the slide. You can place the file anywhere on the slide by dragging it and resize it by dragging the resize box.
- The first slide will be viewed if you press F5 keyboard.
- The Thumbnail view of the video file will be shown on the screen.
- Click the Thumbnail of the video file and it will start playing. If 'Automatically' was selected at the time of adding the file, it will start playing with the display of the slide.

### **Activity**

Make a power point presentation about your school and present it.

## **Graphics**

### **Importance of Graphics**

Photographs, drawings, paintings, illustrations, designs, etc. are need to be scanned and transferred to the computer first for editing. Now pictures captured by digital camera can directly be copied to the computer. After the editing, these photos can be used on printed invitation cards, posters, banners, advertisements, etc. through digital media.

There are numerous programmes to edit photo in computer. Of these programmes, Photoshop is popular worldwide. Brightening or darkening the

entire or a part of picture, designing cover of a book with several pictures, making poster, cutting off the irrelevant part of the picture, erasing blotchy marks on the picture, etc. can easily be done by Photoshop.

Photoshop, an editing software should have been installed in the computer or it should be installed. Editing can be done on a file created earlier.

### **To open Photoshop program**

1. Click start or windows Logo Button and place the mouse pointer on 'All Programs' command, and get a Fly out menu.
2. Click Adobe Photoshop Programs, from this menu and 'Adobe Photoshop' will open.

### **To prepare new file in Photoshop program**

- Click 'New' from 'File' menu after opening up the Photoshop program, and get 'New' dialogue box.
- You will get 'Untitled-1' selected in the square space of 'Name' of the dialogue box. Pressing the backspace button of the keyboard, erase the writing and type a name. It will be the name of the file. Suppose that 'Practice' is typed in the 'Name' box.

If you type the name in this stage, you need not to type it further while closing the file, a new dialogue box will come when you will go to close the file.

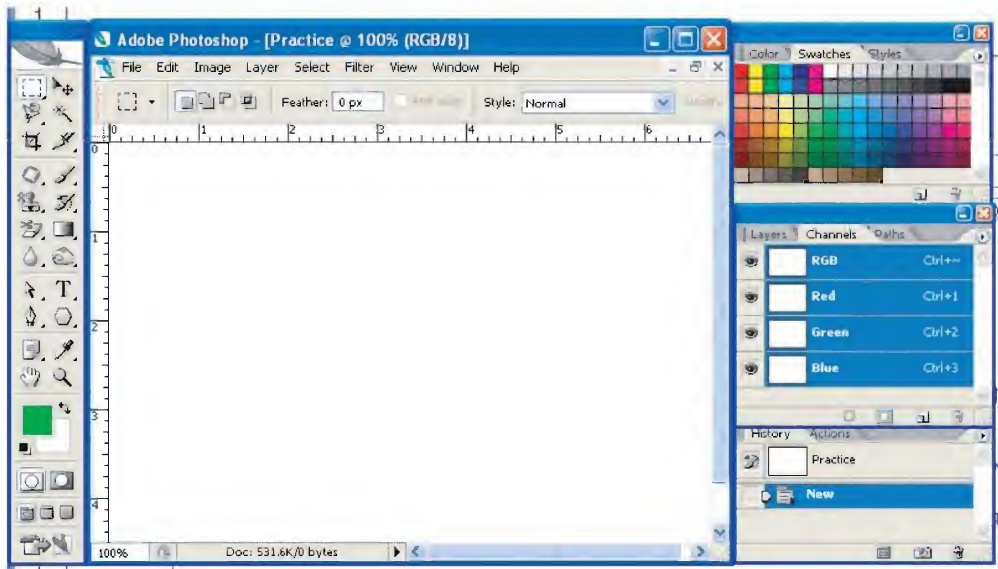
- In the box of 'Width' and 'Height' in New Dialogue Box, type numbers on the measuring unit 'inch', for example, width of 7 inches and height of 8 inches. There is a dropdown menu to determine the unit of measurement on the right side of these two boxes such as inches, pixels, picas, points, cm, mm. Select the requisite unit from this dropdown menu. Fix the measurement by inches. Suppose that the measuring unit of the present job is inch, and 7 in the box of width and 8 in the box of height have been typed.
- The Resolution, for example, 72 Pixel, is kept unchanged.

Images or pictures are created in Photoshop by pixels. Pixel is the smallest square unit of image. 72 pixels per inch mean crossing 72 lines vertically and horizontally in per inch space. The total number of pixels in one square inch will be  $72 \times 72 = 5184$ . The number of pixels in per square inch is called

resolution. If 130 is typed in the box of pixel, the resolution will be  $130 \times 130 = 16900$ . If an image is enlarged, the pixels could be visible. This view is called pixelated. In simple words, it is called split image.

- From the dropdown menu of color mode in the dialogue box, RGB, CMYK, Bitmap, Grayscale, and from Lab Color RGB can be selected as all the images on the monitors of computer, television, and other electronic media are viewed in RGB mode. RGB is the abbreviation of red, green and blue.
- There are three options in the 'Background Contents' of dialogue box. The options are White, Background and Transparent.
- If 'White' is selected from the dropdown menu, the background will be white. If a colour is selected from Background toolbox, it will turn into the colour of the canvas. If transparent is selected, the background will be transparent and checkered. The background option can be selected as you like. White can be selected here.
- Without following the steps described above, Default Photoshop Size can be selected from the 'Preset dropdown list. Thus, all the units of Photoshop will be selected as per the requisition.
- Completing the measurement of dialogue box, press 'OK'.
- A window will be viewed as per the measurement given in the dialogue box. On the left of the screen, Practice @ 100% (RGB/8) will be viewed. This bar is called the title bar. If any name is not used in the Name box of the new dialogue box, Untitled-1@ 100% (RGB/8) will be viewed on the title bar as file name.
- Double click on the title bar, and it will be viewed on the screen.
- The menu bar is located under the title bar and the option bar is below the menu bar.
- The ruler is located below the option bar.
- The Photoshop work is to be done below the ruler on the screen.

The screen can be compared to the canvas of painting of an artist. On the left side of the canvas, there remain brush, color, and different kinds of editing tools, and the palette on the right side.



## The Toolbox of Photoshop and Palette Distinction

At least 69 kinds of tools are there in the Photoshop. Besides, numerous option palettes, dialogue boxes, etc. are there. There is a relationship between different tools and option palettes and dialogue boxes.

In addition, there are brush colour or foreground and colour control icon for canvas or background, visual space control icon for the monitor, mask icon, etc. If a line is drawn either with pencil or with brush tool, the color of foreground works as the color of brush.

- Different palettes are kept on the right side of the screen. The minimise icon is viewed above the right side of the palette. The palette will be minimised if you click the minimise icon, and it will turn into a square or maximise icon. It will be again extended if you click the maximise icon.
- If you double click on the top bar of the palette, it will be either maximised or minimised.
- Clicking and dragging the top bar, the palette can be replaced anywhere.
- There is a toolbox on the left side of the screen. It has included different kinds of tools for different jobs. The tool, which is required to work, becomes activated when clicked. If the mouse pointer is taken inside the screen after selecting a tool of the box, the tool is either viewed on its actual size or as a plus (+) sign, and the editing tools are viewed as circles.

## Selection of Tools and Acquaintance of Move Tools

- 3 selection tools and 1 move tools are viewed on the top of the tool box. At the bottom of the right side of some tools, small arrow sign Z is viewed. It indicates that in the same position, more tools of the similar types remain there, for example, 4 Marquee tools in the same position and 3 Lasso tools in different positions are there.
- Place the mouse pointer on the tool, and the name of the tool will be viewed. Click the tool to activate it. If the mouse pointer is brought inside the screen, it will be viewed either as the own shape of the selected tool or as a plus (+) sign.
- Making squares, circles and objects is possible with marquee tool within selected tool.
- Pressing shift button and dragging Rectangular Marquee Tool, perfect square, and pressing shift button and dragging Elliptical Marquee Tool, perfect circle can be drawn. If you drag pressing Alt button, selections of square and circle will be made being extended from the centre point.

## Shifting of Selection

- After making the square of selection by Rectangular Marquee Tool, remove the finger from the mouse, and the selection of square will be viewed on the screen.
- If you take the mouse pointer inside the selection, a rectangular icon will be viewed below the pointer. Pressing and dragging, the selection can be shifted elsewhere.
- Select 'Deselect' command from the Select menu or click the mouse pointer taking outside the selection while it is floating, it will go away.

## Fill Colour in the Floating Selection

- There are colour icons of 'Foreground' and 'Background' at the bottom of the toolbox. The icon above is for 'Foreground' and the icon below is for the 'Background'. To fill a selection with colour while floating:
- Press Alt+backspace, and the selection will be filled with the colour of the brush or





Foreground. If you press Ctrl+backspace or only backspace, it will be filled with the colour of Background or canvas.

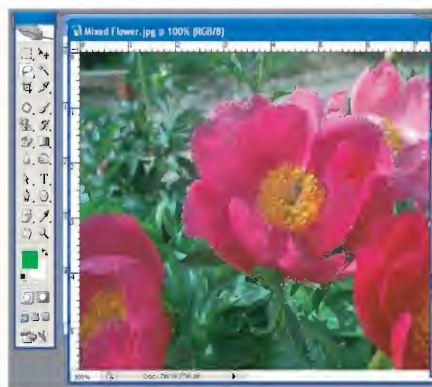
- The selection filled with colour will float. It can be shifted elsewhere by dragging.
- The object will stay at the same position after shifting the selection.
- If the shifting is done by pressing the Ctrl button, the object will be shifted being cut.
- Press Ctrl and Alt during shifting, the object will be shifted being copied.
- The selection will go away if you click the mouse pointer taking outside the selection.

### The Use of Feather

- Typing the number from 0-250 in the box of feather on the option bar, the edge of the object can be softened. The room of the feather extends equally from the edge of the object to inside and outside. If 10 is typed in the feather box, the softness of the edge will be 20.
- The feather effect will be activated by pressing enter button after writing different numerical figures in the box. Fill colour by using either rectangular marquee tool or elliptical marquee tool, and the effect of feather will be visible then. The effect will be still viewed after pasting cut or copied object.

### Select with Lasso Tool and Polygonal Lasso Tool

- Select lasso tool in the toolbox. Numerous selections can be made with lasso tool such as
- Clicking and dragging on the canvas after selecting lasso tool, selections of non-circular and uneven edge can be created. If you release the finger from the pressing position on the mouse while dragging, a closed selection will be created from that position to the first clicking point.
- Clicking inside the selection while floating, it can be shifted elsewhere by



dragging. Filling any floating selection with colour, it can be shifted any filled either with the same or with a different colour.

- Opacity is used to determine the thickness of colour.
- The 'Fill' dialogue box will come after giving 'Fill' command under 'Edit' Menu.
- The foreground is kept selected in the 'Use' box of 'Contents' under 'Fill' dialogue box. It can be changed from the list of dropdown menu if required.
- In the opacity square of the dialogue box, type a number to determine the thickness of colour. The full intensity of colour is 100%. If the percentage is small (%), the colour will be light. Typing 50 in the Opacity box, click OK button, and the foreground of the selection will be filled with 50% of the total thickness.
- There is opacity in the option palette of selection too. The intensity of colour can be increased or reduced with selecting the opacity of this palette.

### **Stroke**

- The border of the selection can be made by 'Stroke' command.
- Select 'Stroke' command under 'Edit' menu as the selection is floating, and you will get the 'Stroke' dialogue box.
- Any number from 1-16 can be typed in 'Stroke Width Box'. The extension of the border is determined with this number. To create the border outside, inside or at the middle of the selection, activate any of these three options by clicking the radio button attached with them.
- Click 'Ok' button of the dialogue box.
- Border can be created either by using the colour of the brush or of the foreground in the Stroke process.

### **Saving File**

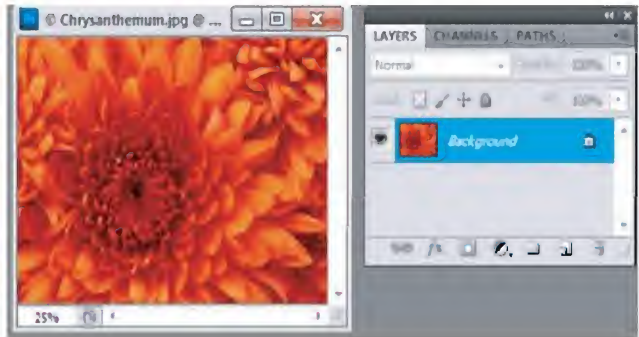
- Give 'Save' command from 'File' menu, and 'Save As' dialogue box will be viewed.
- In the box of 'File Name' of 'Save As' dialogue box, type the name of the file, for example, 'Practice'.
- Click 'Ok' button in the dialogue box, and the file will be saved as 'Practice'.
- 'Practice' can be opened for further work later.

## Layer

Idea of Layer is required before creating objects or editing photos. Almost at every stages of editing photo, you have to work through Layer.

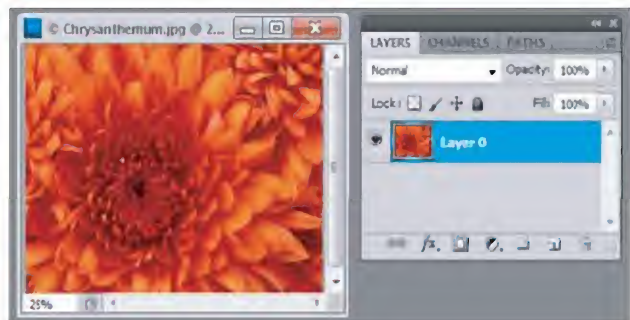
Layer is the screen of editing photos or the phases of a canvas. In this process, editing can be done putting numerous transparent canvases one after another. If the canvas is transparent, editing becomes easier as the existing photos can be watched, but if the canvas of the upper layer is not transparent, the editing of the lower layer can not be seen. If any photo with colour background is opened, 'Background' will be written on the layer palette. The background will not be transparent in spite of being white because white is a colour.

- Suppose that a file with the picture of a flower is opened. 'Background' is written on the layer palette. An icon of a lock is viewed to the right of a layer bar. It indicates that the layer has been locked. The object of a locked layer can not be shifted by clicking or dragging with 'Move' tool.
- If 'White' is kept as 'Background Content' and 'Background' while opening new file, 'Background' will be viewed on layer palette.
- 'Background' can be transformed into layer to shift the sample picture of the flower elsewhere.



### To accomplish the task

- Double click on 'Background' of layer palette, and a dialogue box named 'New Layer' will be shown. In the 'Name' box 'Layer 0' will be viewed. Click OK button of the dialogue box, it will disappear, and the 'Background' layer will be transformed to 'Layer 0'. The 'Background' layer will be 'Layer 1' if it is written after erasing 'Layer 0' in the 'Name' box of the dialogue box.



- If you click on any part of the picture with 'Background Eraser' tool, that part will be erased, and the layer of the palette will automatically be transformed into 'Layer 0'.
- If any part of the picture is erased by Eraser tool, the layer will not be transformed into 'Layer 0'.

### **Insert New Layer**

Many layers should be used to work with more than one file in Photoshop. Keeping different pictures on different layers, their arrangement and editing should be done.

### **To add new layers in palette**

- Click 'Create a New Layer' icon below the palette, a new layer will be added above the existing or selected layer. This layer will be a transparent one. Creating any new object in the newly added layer, shift it elsewhere if required. If five layers are created in this way, layer no. 2 will be above layer no. 1, no. 3 will be above no. 2, no.4 will be above no. 3. If more layers are added, those will be arranged serially.
- The arrangement of steps can be changed if required. Clicking layer no.2 and keeping press on the mouse, drag it and release on layer no. 3, and it will be place in between layer no. 3 and 4. After the selection of dividing line between two layers, release the pressure on the mouse.

You should remember that 'Background Layer' can not be shifted in this way. Background should be transformed into layer to replace it into another stage.

### **Make Picture Visible and Invisible on Layers**

There is the icon of eye on the extreme left of every layer. This icon is called 'Layer Visibility Icon'. Click on the icon of eye, it will disappear along with the picture on the screen. Click again on the empty place of the eye, the icon will be visible again,

and the picture on that layer will be visible again. The picture of the flower on the layer can be made visible and invisible for experimentation.

### **Thumbnail Icon**

There is a thumbnail icon on the right side of the icon of eye. The meaning of thumbnail means the miniature version of large picture. This miniature version on the layer along with the picture on the screen is viewed in the thumbnail icon. It facilitates to edit the pictures on particular layers.

### **Clustering, Integrating and Segregating Palette**

Numerous palettes can be panelled together, for example, Layer, Path and Channel can stay together. The names of the palette will remain as tabs. The tab receiving a click will be activated. The combined situation of several palettes is called clustered palette.

- The present palette is activated as a 'Layer Palette'. Click the layer tab and drag it outside the palette to release. The Layer palette will exist as an individual or single palette.
- Again clicking the tab of the individual Layer, release inside another palette by dragging it. Thick lines around the palette will be viewed. Thus the Layer taken by dragging will be included in the cluster.
- If the 'Layer' palette is not viewed on the screen, select 'Layers' command from 'Window' menu, and you will get the 'Layer' palette.

### **Making Layer Object**

The process of making Selection and filling it with colour has been learnt. Now we will learn how to make two simple objects with rectangular and circular selection tools. We will learn how to write with using the text tool too.

#### **A. Creating rectangular object on Layer no. 1:**

- Select White from the option of Background Contents of New dialogue box, and Background will be as the base of Layer palette. For making a transparent layer on white background
- Click on the icon of Create a New Layer below the palette, and a new Layer will be added above the selected layer. This will be Layer no. 1, and it will be transparent too.
- A rectangular selection will be created on Layer 1 with the Rectangular Marquee Tool, and that will be filled with green colour.
- The rectangular object can be shifted elsewhere by Move tool.

#### **B. Insert Layer no. 2 in the panel, and make a circular object:**

- Click on Layer no. 1, and it will be selected.
- Click the icon of 'Create a new layer' below the palette, and it will be a transparent layer.



Or

- If New Layer command is selected from the dropdown menu of the layer palette, New Layer dialogue box will be viewed. In the square space of Name of the dialogue box, Layer 2 will be viewed. Type Circle in the Name box and press Ok button, and the dialogue box will disappear. A new layer named Circle will be inserted above layer no.1 in the layer palette.
- Now create a circular selection with the Circular Marquee Tool so that half of the circle will rest on the green field and the rest half on the white.
- The selection will be filled with red colour, and a red circle will be viewed in thumbnail of Layer circle.

### C. Preparing Text Layer

- You should keep in mind that if text is started with Type tool, the text will automatically be written on the Text layer. The new text layer will be transparent.



To write on Text Layer:

- Click on the canvas selecting Type tool from the toolbox, and instantly a new layer will be added to the Layer Palette.
- Selecting Text tool, click the mouse pointer on the canvas, and the requisite dropdown option list will be found on the Option bar to determine font, font size, etc.
- Select SutonnyMJ from the dropdown list of fonts.
- The size of the font will be initially selected 72 from the dropdown list of font.
- The font colour will be initially black.
- Type 'সোনার বাংলা', and it will added as a new layer. The letter 'T' will be viewed as thumbnail of the text layer on layer palette.
- The text will be shifted elsewhere with Move tool or mouse pointer.
- Now square, circle, and text can be shifted somewhere with Move tool.

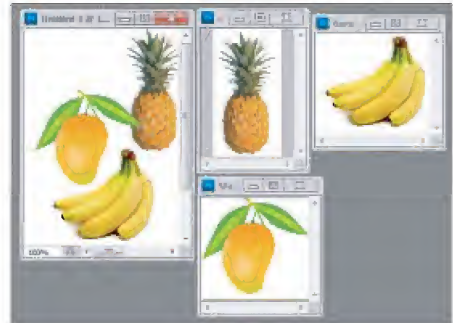
- If the combined position of the three objects is satisfactory, the file can be saved for further use.

### Transferring Picture from One File to Another

All the pictures should be transferred to a single file to work together. Prepare an empty file named Default Photoshop Size. Another file called Banana is opened with the pictures of bananas. Now clicking on a banana with the Move tool, and drag it to the

Window of the empty file. The picture of the banana will be shifted to the empty file. Close the file of Banana.

In the same way, more pictures of mangoes, pineapples, etc. can be prepared and shifted to the new file.



### Fixing Target Layer

- The layer in which the picture is edited is called Target Layer.
- Any picture of any layer can be edited whenever required. The picture of a single layer can be edited once.

**To change a layer into Target Layer:**

- Click mouse pointer on the layer, and the layer will be changed into the Target Layer. The Layer will be viewed selected then.

### Changing the Opacity of the Layer

- Opacity is the intensity of colour. In the opacity text box on the right side above the Layer palette, 100% is viewed as the full intensity of colour. If you put mouse pointer on Opacity, it will be transformed into a two-pointing arrow. When it will be dragged to the left, the opacity will decrease, and when it will be dragged to the right, the opacity will increase.
- Besides, typing numerical figure in the opacity textbook the opacity can be changed.

### Removing Layer

**Select the Layer to be removed. Then**

- Give Delete Layer command from the pop-up menu of the Layer palette.

Or

- Selecting the Layer, click the icon of Delete Layer below the palette, and a dialogue box with a question, 'Are you sure you want to remove this Layer?' will come. If you click 'Yes' button, the layer will be removed, but if you click 'No', the removal process will be stopped.

## Combining or Merging Layers

Sometimes it is required to edit all layers together in Photoshop. After finishing the job, if it is required to take print by a different printing machine, it should be copied on CD or pen-drive. The size of the file will be small for getting this job smoothly. The size of the file will be comparatively small if the layers can be combined.

### To combine layers

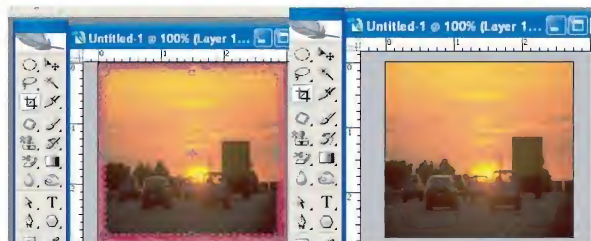
- There are three commands called Merge Visible, Flatten Image, and Merge Down on the pop-up of the Layers palette.
- If any layer is invisible, give the command of Merge Visible, and only the visible layers will be combined.
- If Merge Down command is given, the selected layer and the layer below of it will be combined.
- If you choose Flatten Image, all the layers will be combined.
- If there is any invisible layer, an inquiring message will come whether it will be removed or not. Click Yes button, and the invisible layers will be removed and the visible layers will be merged.

## Cut, Copy, Paste and Paste into

Selecting any object or image either fully or partially, cut, copy and paste command can be effective. If you paste any object after cutting or copying, a new layer is created, and the object is pasted on the new layer. If any transparent layer is created before pasting, any cut or copied object can be pasted on the layer.

### The Use of Crop Tool

The border of pictures collected from different sources can not be perfect or precise. It can be required to cut off the edges or



unnecessary parts. In spite of that, the image can be tilted to one side without being straight.

Before starting editing, this kind of problem can be mended. Crop tool is used to cut off the unnecessary part of an image. Crop means cutting off.

- The border of this old picture has been uneven, and the first step of editing the picture will be cropping up the uneven edges. To get the job done:
- Select Crop tool from the toolbox;
- Select the necessary part keeping the uneven part outside by clicking and dragging it like the rectangular marquee tool.
- Eight hollow square boxes will be viewed, four on the arms of the selection and four on the corners. Clicking any one the boxes and dragging it, the area of the selection can be either reduced or increased.
- After fixing the selection area, press the enter button of the key board, and the outside of the selection will be cropped.
- If you think that the crop command should not be given even after selecting, press Esc button to undo the effect. Selection can be made again if required.

### **Cropping up Tilted Picture**

- To crop any tilted picture, the picture is to be opened and Crop and Straightened Photo command is to be selected from the sub-menu of Automate command in File menu. This process is applicable only for solid background. If the background is of multicolor, the work of cropping will be impossible. In that case
- Select with crop tool.
- The mouse pointer will be transformed into a curved pointer or rotate tool. The selection will be attached with the tilted position of the picture, and the area of cropping will be finalized with other handles.
- Press Enter button, and the cropping up of the picture will be done, and its positioning will be straight.

### **The Use of Eraser Tool**

- When any color is erased by eraser tool, the color is covered with the color of the canvas. If the color of the canvas is white, it seems that the color is

being erased, but if the color is different, it will be viewed. The picture on transparent layer will be simply erased.

- Press Cap Lock to erase the minute detail, and the eraser tool will take the shape of plus (+) sign. The editing of small parts will be done then.
- The work of erasing can be done by selecting brush, pencil, or block from the list of Mode drop-down of the Option bar on eraser tool. The rubber eraser works like an electronic version if block is selected. The Opacity options of other tools can be used if they have been selected.

### **Creating Blend with Gradient Tool**

Paint Bucket Tool is kept on the same position of Gradient Tool. If you select Gradient tool, icons of creating five kinds of gradient will be viewed on Option bar, for example, Linear Gradient, Radial Gradient, Angle Gradient, Reflected Gradient and Diamond Gradient.

Blurring of a color from the beginning to the end is called blend. The color blurs from the beginning edge to another in



linear blend. On the contrary, in radial blend, the color diffuses either from the centre to periphery or periphery to centre.

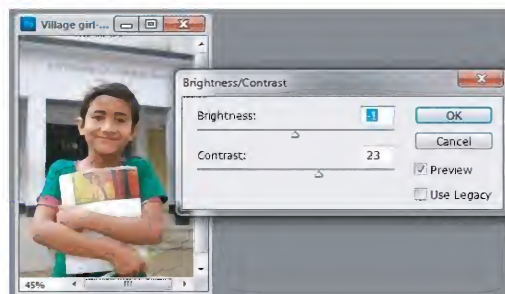
### **To create linear blend with gradient tool**

- A selection of 3 inches width and 2 inches high can be created.
- Selecting gradient tool, bring the mouse on the canvas, and it will be transformed into a plus (+) sign. Now drag it from the left-middle of the selection to the other end, and release the pressure of the finger from the mouse pointer. It will be viewed that the selection starting with deep black color gradually diffuses to the end.
- Blend can be created from the right to left, left to right, top to bottom, bottom to top and diagonally. If anything is not selected, blend will be created through out the screen.
- Activate radial gradient icon on option bar by clicking it for creating radial gradient.
- The mouse after bringing onto the screen will be transformed into a plus (+) sign. Now drag it from the middle of the selection to the other end, and release the pressure of the finger from the mouse pointer.



## Adjusting Brightness and Contrast of Picture

Pictures that have been scanned or captured by camera can be indistinct. Visibility of color or black and white can not satisfy the expectation level. In that case, increasing brightness and combining contrast are required. To increase the brightness and contrast



- Select Adjustment command from Image menu and get a submenu from where click Brightness/Contrast, and the related dialogue box will be viewed.
- Moving the triangle of brightness/contrast-slider in dialogue box either to the right or to the left, the brightness and contrast can be increased or reduced.
- If any part of the picture is selected before coming of the dialogue box, increasing or reducing brightness and contrast only of the selected part can be done by giving command.

Activate Preview check box in the dialogue box by clicking it, the work of changing color can be viewed instantly. If the changed form does not seem satisfactory, press Alt button of keyboard and the Cancel button of the dialogue box will be changed into Reset button. Keep pressing Alt button and click Reset button, and the work previously done will be cancelled.

## Illustrator

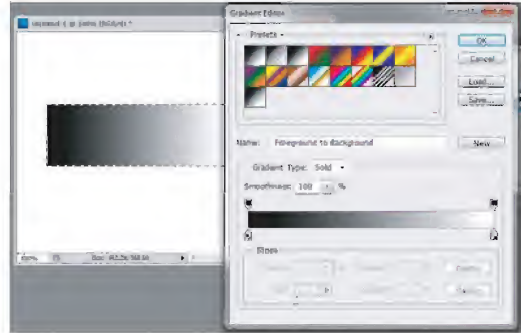
**Painting with Adobe Illustrator:** Adobe Illustrator is the programme of drawing picture, illustration, making logo and designs. As the scope of making design with Adobe Photoshop is limited so the scope of doing editing work in Adobe Illustrator is almost zero. The main job of illustrator is drawing.

Now the artists of our country have already left using paint and brush for cover designing of books. They design covers by using Adobe Illustrator. Making invitation card, advertisement, poster, banner, bill-board, etc. can not be imagined without illustrator.

There are plenty of programmes in computer for making designs, but the demand of illustrator is on the peak for facilities and varieties. That is why Illustrator is popular throughout the world.

## Editing Gradient

- Starting, finishing, and changing or combining color in the dialogue box, the editing of gradient can be done. To get the job done
- Gradient Editor Dialogue box can be viewed by clicking on gradient bar.
- Color Stop triangles can be viewed at the left and the right end of the gradient slider of gradient editor dialogue box, and Opacity Stop triangles are found on the top of the same dialogue box. Suppose that the starting color of a linear gradient is red and the finishing touch is yellow. To use blue instead of red



- Click the Color Stop Triangle at the left end of the gradient slider, color swatch will be activated at the end. Click Color swatch and Select Stop Color dialogue box will be viewed. Selecting blue color in this dialogue box, click Ok button, and blue will be the Stop Color at the left-end on gradient bar. Now drag with gradient tool from one end to another, and a gradient of blue and yellow combination will be created.
- If you select Color Stop at the bottom edge and Opacity Stop on the top edge of gradient slider, an icon of diamond shape will be viewed in the middle. This icon indicates the middle point of the gradient from where the color starts diffusing.

Selecting the middle-point icon, type a position-fixing digit in the location box to fix the middle. The middle point can be shifted by dragging the icon either to the left or to the right.

## Adding and Removing New Color and Color Stops

If more than two colors are to be used for gradient, add new Color Stops to the slider. To do this

- Click anywhere at the bottom of the slider, new Color Stop will be added to color beside with the diamond for determining color blending middle point. In the same way, Color Stops of requisite number can be added to gradient slider.
- If any additional Color Stop is needed to remove or crop, click that color stop icon and drag it to the outside of the slider, and the Color Stop will be removed.

Apart from writing in the Illustrator programme by using keyboard, writing is possible as an artist does by using brush. The font size and shape can be changed as required.

Like other programmes, open Illustrator and start making new files.

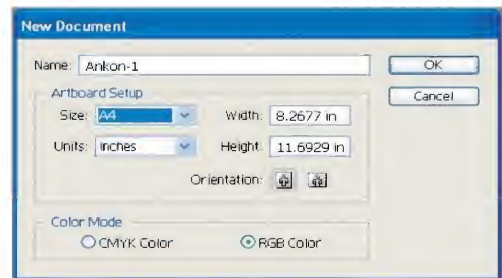
### Open Illustrator Programme

#### To open Illustrator programme

1. A menu will be viewed when you will click on Start button at the left end of the screen with mouse pointer.
2. You will get a fly out menu placing the mouse pointer on All Programmes in this menu.
3. Clicking Adobe Master Collection menu in this menu, get another fly out menu. You will get the list of programmes of Adobe in this menu.
4. If you click on Adobe Illustrator from the list, the programme will open.

### To Open File in Illustrator

- Give New command from File menu or press Ctrl N, and New dialogue box will be viewed. In the New dialogue box
- Type a name in the Name dialogue box, for example, Ankon-1. Any name can be used instead of this one. The name which is easy to remember or compatible with the subject can be given. Finding out the file next will be easier for this.
- A detail drop-down list will be viewed by clicking the drop-down arrow of size-box. Different size of the paper will be viewed here. The size of paper which is required should be selected by name, and the height and width of the paper will be seen in the box.
- The units of measurement are found in Units box. The users of our country are familiar with the measurement of inches, but points, picas, millimetres, centimetres, pixel, etc. can be used to work more precisely. Click the drop-down arrow in unit box, and a detail drop-down list will be visible. The requisite unit of measurement can be fixed from this list.
- Pictures of two persons are viewed on the right of Orientation. If you click



the first one, the position of paper will be portrait, but it will be in landscape position if the second one is clicked.

- Two options are shown as RGB and CMYK in Color Mode. CMYK mode is suitable for printing work, but RGB mode is better for electronic medium though on computer screen, the difference of these modes are not precisely distinguished.
- Fixing the measurement, press OK in the dialogue box, and it will disappear. A new window will come.

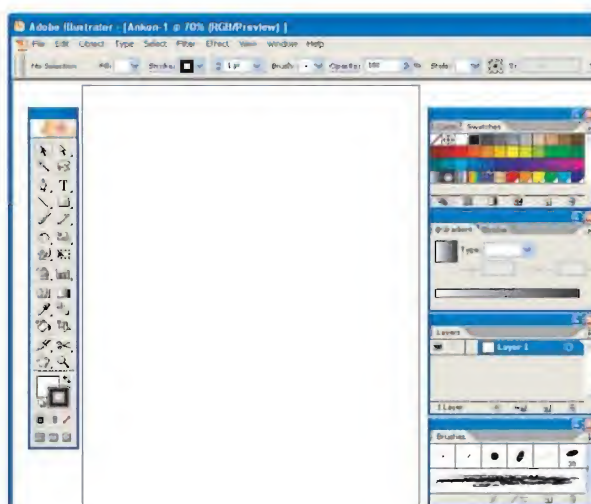
In the Name box of New dialogue box, type a file name, and it will be viewed on the title bar at the right side of Adobe Illustrator above the menu bar. If any file name is not typed 'Untitled...' will be viewed on the title bar.

## Work Tools

New vacant file will be found on the screen after creating new file. Numerous objects like menu bar, toolbox, floating palette, scroll bar, etc. will be viewed for starting work.

### Title Bar

After opening the Illustrator Programme, on the left-end above the screen, the other information of the document with the name of application on the title bar may be viewed, for example, Adobe Illustrator-[Ankon-1 @ 70 (RGB/Preview)]. Here, Adobe Illustrator is the name of application, Ankon-1 is the name of file if this name was given during its creation, and @ 70 (CMYK/Preview) is the size of visible area and presentation of color mode. The entire part stretching to the right is the title bar.



- If any name is not given during opening a file, it can be given after completing the work and saved as well. Files are given different names, and when a file is opened, its name is viewed on the title bar to the right of the application.

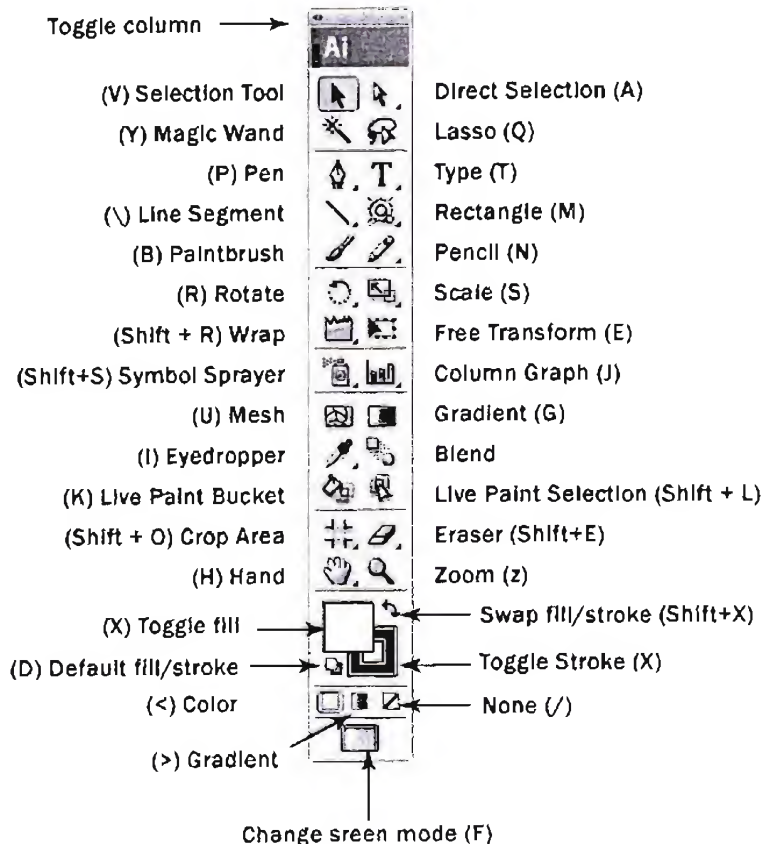


Different kinds of tools and options for designing and drawing are arranged in Toolbox & Palette. Designing and drawing can be done by using these tools and options, and editing work is possible to get the image in its expected form.

### Names of the Necessary Tools of the Toolbox

Names of the necessary tools should be known before starting work. Ellipse, polygon, star, and spiral tools stay on the linear position in the toolbox. These are called 'Group Tools'. Right-faced triangle is attached with these tools. If a triangle sign is attached with the tool, it means that more tools are kept in the same position. If you click the visible tool in the box and continue pressing the mouse, all the tools will be viewed together. Drag the mouse pointer on the tool required to use and click, the tool will be visible in the toolbox.

There are some icons in the swatch below the tools of toolbox. Imposing color in the object or on the edges of object or canceling command can be done with these icons. Create an object to understand the use of the icons. To make an object like this—



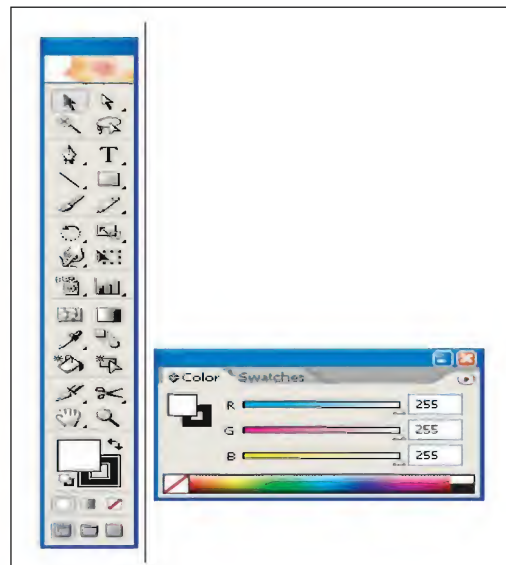


- Click the rectangle tool with mouse pointer, and the tool will be selected.
- Bringing the mouse pointer inside the screen, and after clicking elsewhere drag diagonally right below for an inch, and release the finger pressure from the mouse, a rectangle or square object will be created.
- The object will be selected and filled with a color.
- Four hollow boxes will be viewed on the four corners of the selected object. Four small solid boxes will be viewed on the four corner.
- If the object becomes free from selection, click Direct Selection Tool in the toolbox with mouse pointer, and the Direct Selection Tool will be selected. Now bringing the mouse pointer inside the screen, click the object with Direct Selection Tool, and the object will be selected. In this situation, again click Selection Tool, and four solid boxes will be viewed on the arms along with four solid boxes on the corners.

## Filling Color on Object

### Fill and Stroke

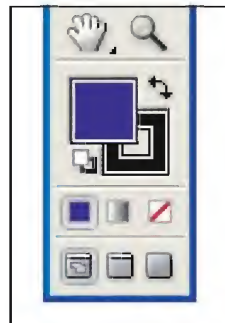
- The edge or border of an object is called 'Stroke' and the internal part is called the 'Fill'. The use of 'Fill' and 'Stroke' swatch is related to color palette. If the color palette is not viewed on the screen, either give Color command from window menu or press F6 button, and the color palette will be visible. Click Fill swatch and it will be activated and viewed above. Thus only the work of filling can be done. Though an object can be filled, not the stroke. Similarly, clicking the Stroke swatch, activate it and stay over Fill swatch. Thus, color can be imposed on the strokes of object. It will be impossible to fill object with color from here.
- When the Fill swatch is active and the color that will be clicked on the Color Spectrum Bar of the color palette, the inside of the selected object will be filled with that color. Similarly, when the stroke swatch is active and the color that will be clicked on the Color Spectrum Bar, the strokes of the objects will be filled with that color. The color inside the object will remain unchanged.



- Stroke can be thick for a clear view. For having this effect, select stroke command from Window menu, and Stroke palette will be viewed on the screen. Select at least 10 from the weight drop-down menu in Stroke palette. In this stage, if color is imposed or changed, it will be clearly visible.

### Color, Gradient, and None

Color, Gradient and None are the three icons respectively below the Fill and Stroke swatch. Clicking Color and Gradient icon separately activate Color and Gradient palette. Click None icon, and the fill of selected object or the color of stroke can be inactive or cancelled. If the object is filled with color or gradient, the color will be viewed. If the object is selected, the color will be changed as well.



### Increasing and Reducing the Size of Object

Many minute jobs are done to create object. Doing minute jobs may be troublesome in the usual size of the object. If a specific part of the object is viewed big, it facilitates doing the work easily. Viewing page in increased size while working in Illustrator is called Zoom in, and Zoom out in decreased size. Object will also be viewed either big or small with increasing or decreasing size. To view object big or small, the visible size of the page will be made big or small by using Zoom Tool. To get the job done

- The Zoom Tool will be selected if it is clicked in the Zoom Tool box.
- After selecting Zoom Tool if the mouse pointer is brought on the screen, it will look like a flint-glass, and a plus (+) sign will be visible in the glass.
- The size of the screen will be bigger when clicked with Zoom Tool on screen. With the increasing size of the screen, the object will stay on the screen being enlarged. If it becomes enormously enlarged, some objects will not be viewed on the screen. Clicking on the screen and dragging with hand-tool, that part can be brought on the screen.
- Press Alt button while the Zoom Tool is active, and the Zoom Tool will be transformed into Zoom Out Tool. Keep pressing the Alt button and continue clicking with Zoom Out Tool, the size of the screen will be gradually smaller.
- Press Ctrl - or Ctrl = button for completing the work of Zoom out and Zoom in.



## Changing the Positioning of Page By Hand Tool

If the size of the page is made small or big, the necessary part of the object can go outside the visible area. In this case, to shift the object in a suitable place on the screen

- Select Hand Tool clicking it in Hand Tool Box.
- Clicking on the necessary object with Hand Tool and dragging it to a suitable place, release the pressure of finger on the mouse.

In this way, the positioning of the original page will be changed. The object that has been clicked will not be shifted in a different way.

## Mode of Viewing Object

There are some modes to view objects in Illustrator programme. Any of these can be selected from View menu as required.

- In Outline Mode, the object is viewed as outline or linear shape. In this mode, editing of the shape or structure of the object, particularly the detail work of editing line or path can easily be done.
- The object is viewed perfectly in Pixel Preview or Preview mode.
- The image viewed in Overprint Preview Mode can be printed out.

## Creating Object

In the preparatory stage of creating object, the elementary process of making different kinds of shapes should be learnt, for example, square, rectangular, circular, elliptic, multi-angular, starry, spiral, etc. To create an object

- The Rectangle Tool will be selected if clicked with mouse pointer.
- Bringing the mouse pointer inside the screen and clicking anywhere, drag diagonally below an inch and release the pressure on the mouse, and a square or rectangular object will be created.

In the same process, select another object tool from the Tool box and make other objects. No object can be created once. By erasing the object partially or fully, we can start in a new way. For getting the job done, it is required to learn how to erase the entire object or part of the object.

## Selecting Object and Erasing Borderline or Path

- If the object is filled with color, the object will be selected if clicked with Selection Tool or Direct Selection Tool. Keep pressing the Alt button and click on the path of object, the entire object will be selected.
- To erase the path of object or the part of path, select them with either Selection Tool or Direct Selection Tool. Press Backspace or Delete button, the Path or the part will be deleted.

If Backspace or Delete button is pressed, the object is erased. Select Cut command from Edit menu, and the object goes to temporary memory called clipboard and stay there until other object is not cut or copied. When an object stays on the clipboard, selecting paste command from Edit menu will restore the object to the document.

### Path

The path of the object can be formed with more than one segment. A single segment can also be used if necessary. The border of the object is called Path. A straight line is called Path too.

### Selection Tool

- Selection Tool, Direct Selection Tool or Group Selection Tool can be used to select either the entire object or a part of an object.
- Selection tool is called the Black Arrow. Click the selection tool with mouse pointer for using the tool, and it will be selected. If the mouse pointer is brought on the screen after selecting the tool, the mouse pointer takes the shape of a black arrow or selection tool with which click on the object and it will be selected. Selection Tool is used to select the entire object.
- If any object is selected with Selection Tool, rectangular, circular or bounding box is created around the object. Four hollow boxes on four corners and four on the four arms will be visible. These boxes are called Resize Box. Clicking and dragging on the resizing boxes, the size of the object can be enlarged and reduced. Keep pressing shift and drag, the object will be big or small according to proportion.
- Clicking the centre of the selected object with Selection Tool or on any of the arms or any part of the object and dragging, it will be shifted to anywhere.

For selecting more than one object together\_

- After selecting the first object, keep pressing shift button and select the next object. In this way, select as many as objects required. When all the objects are selected only one bounding box will square them.
- Clicking and dragging the resize box of the bounding box, all the objects will be enlarged and shortened together.
- Click the mouse pointer on an empty space on the screen, the object will be selection-free. If any particular object requires to be selection free from numerous selected objects, click the object pressing Shift button.

### Direct Selection Tool

The white tool on the right of the Selection tool is called Direct Selection Tool. This tool is called the White Arrow.



Direct Selection Tool or the White Tool is used to select the segment of the object or the entire object. A part of the object can separately be enlarged or shortened by selecting any anchor point of the object with Direct Selection Tool.

### Grouping Object

To create a group of objects after creating many circular, elliptical, square, and rectangular:

- A. Select either all or requisite objects.
- B. The selected objects will be grouped if Group command is given from Object menu.

Clicking on a blank space, make all the objects selection-free, and then click any object with black arrow or selection tool, a rectangular bounding box will be created around the grouped objects. Thus the objects inside the selection box will be selected together.

To make the grouped objects ungrouped:

- A. Click an object, and the grouped objects will be selected.
- B. Give Ungroup command from Object menu, and the grouped objects will be ungrouped.

### Lock the Objects

While working with more than one object, it is required to keep one or more than object locked. As a locked object can not be selected, the editing work can not be done. So the locked object can not be changed inattentively.

To lock an object:

- A. Select a particular object.
- B. Give Lock command from Object menu.

If it is required to edit or change locked object, unlock it. To unlock an object select 'Unlock All' command from the object menu. Thus all the objects will be unlocked. An unlocked object can be edited in a usual way.

### Use of Cut, Copy and Paste Command

After selecting any object with selection tool and giving Cut command from Edit menu, the object will disappear and it will be copied if Copy command is given. Any cut and copied object is stored on clipboard, and if Paste command is given from Edit menu, the object will be pasted on the screen. The object can be shifted elsewhere by dragging with selection tool.

If any object is dragged Pressing Alt button of the keyboard, it is shifted after a copy has been created.



Give Paste in Front command, and the object will be placed above the existing object.

Give Paste in Back command, and the copied object will be placed below the existing object.

## Layer

Layer means step. In doing work in this process, editing can be done keeping different objects on different steps. This layer or step can be compared to transparent glass or polythene. If three objects or pictures are created on three glasses or transparent media and placed one after another, three objects will be viewed. These three glasses or media are regarded as layers.

The facilities of working in layer process are as follows:

- Arranging steps among Layers;
- keeping more than one layer invisible;
- keeping layers locked;
- Add new layers and remove unnecessary layer, etc.

## Creating New Layers

If Layer palette is not viewed on screen, Give Layer command from Window menu, and the layer palette will be viewed. At the beginning, only one layer will be on the palette. Finishing the work of a layer, add a new layer on the palette to create new object. To add new layer

- A. A new layer will be added on layer palette when you click Create New Layer icon below the row of Layer Palette.
- B. If any layer numbered serially needs to be identified with a particular name, double-click the layer and a dialogue box called Layer Options will be viewed. Type the necessary name on the Name box, and click Ok button. The serial number or name of the concerned Layer (if the name was previously given) will be changed into the name typed in the dialogue box.

## Cancel Layer

- A. Selecting the Layer and Delete command from the pop-up menu on layer palette, the selected layer will be cancelled.
  - In the process of deleting layer of artwork or object oriented, a cautionary message like 'Delete Layer?' will be viewed. Click 'Ok' button, and the layer will be deleted. Click 'No' button, the deleting process will be stopped. But clicking and dragging the layer, place on the Delete icon, no such message will be viewed.

## Merging Layers

After the completion of creating and editing objects of two or more layers, those will be merged together. To get the job done:

- A. Select the layers.
- B. Select 'Merge Selected' command from pop-up menu of layer palette, and the layers will be merged.

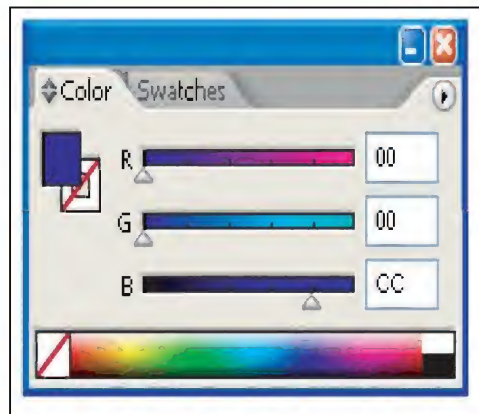
## Use of Color in Object

After creating object, fill color as required. Color palette, color bar, or color spectrum bar, gradient, etc. are used to fill color in object.

### Color Palette

If color palette is not viewed on screen, give color command of Window menu, and the color palette will come.

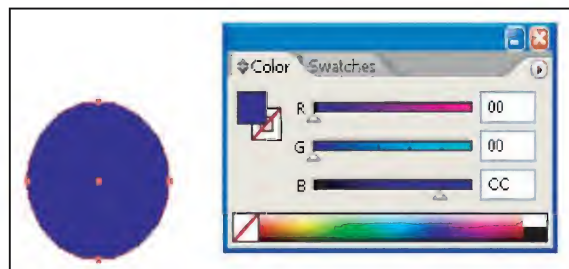
- On the left above the Color Palette, indicator box of Fill and Stroke or Swatch is found. Color Slider and Color Spectrum Bar are found below it. If work is done on grayscale mode, only one color slider will be viewed. If work is done on RGB = Red Green Blue mode, 3 color sliders will be viewed, and if work is done on CMYK mode, 4 color sliders will be viewed.



### Fill Color

To fill color in any object:

- A. Select the object.
- B. Clicking in Fill Indicator Box of Color Palette, activate it. Activated Fill Swatch will stay above the Stroke icon.
- C. Click the requisite color in Color Spectrum Bar.
  - The selected object will be filled with the color in Color Spectrum Bar. On the extreme right of the Color Spectrum Bar, Swatch of black and white color will be found. If black swatch is clicked, the object will be filled with entirely black color, and if the white swatch is clicked, the object will be filled with entirely white color.



## The Use of Stroke

The border of object is called Path. The measurement of making path thick or thin is called Stroke. Object of grouped and ungrouped path, straight, curved lines, etc. are controlled by Stroke. Controlling strokes means make path thick or thin and filling color. Making Stroke thick and thin can be done with Stroke Palette. To get the job done

- A. Select object or path. If the Stroke Palette is not viewed on the screen, click Stroke command from Window menu, and the Stroke Palette will be viewed.
- B. When the object or path remain selected, click the downward arrow of Weight box in Stroke Palette and keep pressing the mouse, many measurement units will be shown in the dropdown list. Select a number from the list as required. If a small number is selected, the stroke will be thin, and if a large number is selected, the stroke will be thick.
- C. A measurement unit can be typed directly in Weight box if required. The fraction of a number can be used too. Measuring the thickness and thinness, from 0-1000 points can be used.



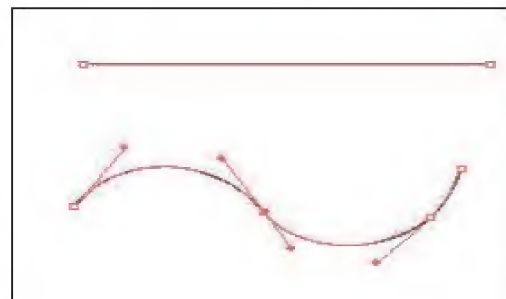
## Pen and Pencil Tool

The main reason of being the Illustrator programme popular is the use of Pen Tool. It is possible to make complex and very small design with Pen Tool and do the editing work.

Two anchor points are found at the two end of a path or line. The first anchor point is called the starting point and the second anchor point is called end point. There is a controlling handle with the anchor points of curved path and a control point outside the control handle. Clicking and dragging the control point, the curve of a line can be controlled. Anchor point, control handle, and control point are not viewed in print.

Pencil Tool is another form of Pen Tool. Curve lines can be made by dragging Pencil Tool.

Pen Tool is the main tool of making vector object. A subtle object can be created by keen path with the help of Pen Tool.





## Closed Path and Opened Path

A closed Path has no beginning and closing point, for example, circle and square, etc. A closed path may have curved ends. On the contrary, an Open Path has a beginning and closing end.

## Pencil Tool and Pen Tool

A Path can be created easily with the Pencil Tool. Selecting pencil tool from tool box, clicking and dragging on the screen path can be created by drawing curved lines. The function of pencil tool is like making sketch by drawing on the paper.

On the contrary, path is created with Pen Tool by clicking and dragging. To make path with Pen Tool

- A. Select pen tool from toolbox. Click anywhere on the screen and release the pressure of finger from the mouse.
- B. Click second a little bit above and release the pressure of the finger from the mouse.
- C. Click on the right below from the place the second click.
- D. Click above the right a bit, and drag rightward.
- E. Click on the right a bit below, and click again on the right from the position of next moving a bit rightward from the previous click.
- F. Clicking on the right above and drag further right from this position
- G. Click on the right below.

A wave-like open path object can be created in this way.

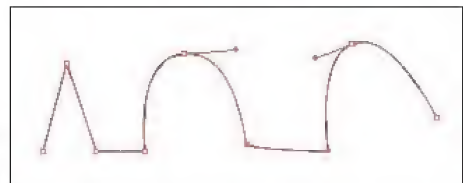
## Editing Path

A path can not be created according to the expectation at the first attempt. After creating the path, give it the expected shape through editing. By editing the path, new anchor points can be added, and it can be removed if required or cropped up or the two separated parts can be connected. In this way, a change can be made as many times as required.

## Adding Anchor Point

To add anchor point at any point of the path:

- A. Select Add Anchor Point Tool from toolbox, and bring the mouse pointer inside the screen, a plus sign (+) will be found on the right below the Pen Tool.
  - B. Click any place of the path with Anchor Tool Point, and a new anchor point will be set on that point.
- The new anchor point added on the straight path is called Straight Corner Anchor Point and on the curved path is called Smooth Anchor Point.



## Removing Anchor Point

To remove any anchor point on the path:

- A. Select Delete Anchor Point Tool. After selecting the tool, bring mouse pointer inside the screen, and a minus sign (-) will be viewed below the Pen Tool.
- B. If you click any anchor point with Delete Anchor Point Tool, that anchor point will be deleted.

## Editing Curve Path

A circle/rectangular object or a design will be created with pen/pencil tool for editing path. To edit curve:

- A. Selecting Direct Selection Tool and clicking an anchor point, drag and shift the position of it, and the curve and shape of the anchor will be changed.
- B. Click an anchor point, the handle of it will be viewed. Clicking and dragging the control point of any end of the handle, the part of the path related with the anchor point, the curve will be reduced or increased or the direction will be changed.

After creating open path with Pencil or Pen Tool, the strokes can be thick or thin, and filled with color. Creating closed path with Pencil or Pen Tool, it can be filled with any color.

## Writing Job

Writing job is mandatory for the covers of books, magazines, poster, advertisements, cards, etc. Type Tool is used for writing in Illustrator. Six kinds of Type Tools are found in Illustrator. Arrangement of writing can be done in three ways with these Type Tools, for example, Point Text, Area Text and Path Text.

## Point Text

In Point Text process, the way of typing is very easy. To type in this process:

- A. Select Type Tool from the toolbox.
- B. Click any blank space of the screen.
- C. Change the keyboard into Bangla for typing in Bangla.
- D. Click 'Character' in ribbon on the screen, and Character Palette will be viewed. Select font from the Font Pop-up menu of Character Palette.
- E. Start typing following the rules of word processing. Click any letter with the Selection Tool, and a line will be viewed below it. This line is called 'Baseline'.

## Editing Writing

The requisite commands will be found in Type menu and in Character Palette.



Select Character from Type command of Window menu, or press Ctrl T, the Character Palette will be viewed floating on the screen. When it is floating, it can be used as required.

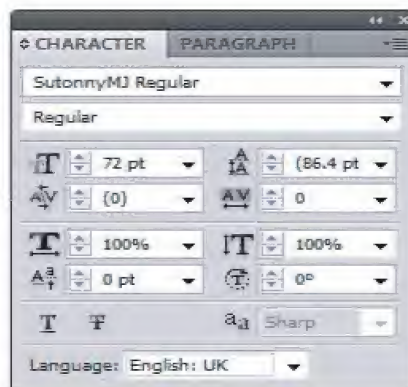
### Selecting Letters

Letters, words can be selected according to the rules of word processing while the Type Tool is selected. Click with Direct Selection Tool in the writing, the entire typed part i.e. the entire writing with baseline will be selected. In this case, the letters will not be highlighted. The baseline under the letters will not be viewed.

### Changing Color of Letters

To change the color of the letters:

- A. The requisite letters or writings should be selected.
- B. The color on the bar of Color Palette or Swatch Palette that will be clicked, the selected letters or words will assume the color.



### Deleting Letters

A letter or letters or paragraph or the entire writing can be deleted by pressing Backspace/Delete button if it is selected.

### Enlarging or Reducing Font Size

- A. Clicking the downward arrow on the right side of Font Size box in the Character Palette as the letter or letters are selected and keep pressing the mouse, a list of measuring number about Font Size will be viewed. Continue pressing mouse and take on a measurement number, and the number will be selected. After giving the command, release the pressure on the mouse and the size of the selected letters will be either enlarged or reduced.
- B. If the requisite measurement number is not found in the drop-down menu, place insertion pointer in Font Size box clicking directly.
  - Pressing Backspace button, delete the existing measurement number and type new number.
  - Press Enter button and the selected letter or letters will be either enlarged or reduced according to the measurement number.

### Increasing or Decreasing Font Size Vertically and Horizontally

To get the job done:

- A. Clicking the drop-down arrow on the right of Vertical Scale and keeping pressure on the mouse, get the list of measurement number. If a number

bigger than 100% is selected continuing the pressure on the mouse and dragging, the font size will be vertically big. On the contrary, if a number smaller than 100% is typed, the font size will be vertically small. 100% is the ideal measurement of letter.

To increase or decrease fonts horizontally:

- B. Clicking the drop-down arrow on the right of Horizontal Scale and keeping pressure on the mouse, get the list of measurement number. If a number bigger than 100% is selected continuing pressure on the mouse and dragging, the font size will be horizontally big. On the contrary, if a number smaller than 100% is typed, the font size will be horizontally small. 100% is the ideal measurement of letter.

### Baseline Shift

If any text written with Direct Selection Tool is selected, the line seen below the text is called the Baseline. Shifting the lower edge of the text up or down is called Baseline Shift.

Selecting measurement number from the drop-down menu in 'Set the Baseline Shift box' of Character palette, or typing measurement number directly in the Set the Baseline Shift box, the measurement of Baseline Shift should be fixed. The use of negative number will take the text downward the baseline, and conversely positive number will bring the text upward the baseline.

### The Leading

The space between the lines is called the 'Leading' which can be required for the text containing many lines.

- A. Selecting measurement number from the drop-down menu in Set the Leading box of Character palette, or typing measurement number directly in the Set the Leading box, press Enter and the Leading will be activated.
- B. If the upward arrow button of Set the Leading box is pressed, the measurement of Leading will increase, and if the downward arrow button is pressed, the measurement of Leading will decrease.

### Area Text

Any text typed or placed in square, rectangular, circular, elliptical or any closed path is called Area Text. To type or arrange text in a closed path:

- A. Create square, rectangular, circular or elliptical path.
- B. Selecting Type Tool, place the mouse pointer on the closed path, the Type Tool





will take the shape of Area Type Tool.

- C. Click on the anchor point of the path, the insertion point will be placed inside the closed path, and it will be used as a Text Box or Text Container.
- D. Start the work of typing.
- E. When you will reach the right edge of a line, the insertion pointer will automatically go down the next line. If typing continues in this way, the next line will be automatically started.

### Typing in the Path

Typing work inside and outside the closed path, and below and above the open path can be done with Path Type Tool of Illustrator. Typing work inside and outside circular object like making monogram can be done.

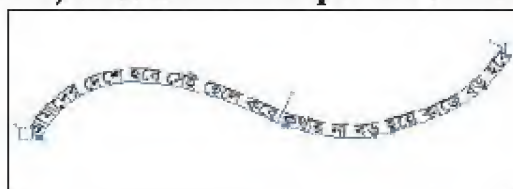
### Typing outside Circular Object

- A. Make a circular object, and if it is filled with color, click None icon either of Color Palette or of Tool Box to delete the color of the circle.
- B. Select Type on a Path Tool from the Tool Box as the circle is selected. Click the anchor point of this circle with the tool, and the insertion point will be placed outside the Path of circle.
  - The circle must be selected while clicking. If it is not selected, the works of step 1 and step 2 will be completed.
- C. If typing is started, the text will advance following the path of circle usually from left to right. In the same way, the text will be arranged outside rectangular object if required.
- D. Click the text with Direct Selection Tool and the Eyebeam between the Path and the text will be selected.
- E. Clicking the edge above or below the Eyebeam and dragging in a circular way the text can be shifted elsewhere.



### Arranging Writing in Open Path

- A. An Open Path can be created with Pencil or Pen Tool.
- B. Click on the selected Path with Path Tool, and the insertion pointer will be placed on the Path.
- C. Type following the usual rule.
  - The Path and the Text will be selected if the text is clicked with Direct



Selection Tool, and the text can be shifted elsewhere by clicking and dragging the Eyebell while selected.

- The Path will be selected if clicked with Direct Selection Tool, and the anchor point of the Path will be viewed. Now the Path can be curve or big or small by following the rules of editing. If the Path is made curve, the text will follow the line.
- If the Path is smaller than the text, the additional text will not be viewed. When the Path will be extended, the rest of the text will be viewed.

### Creating Outline of Letters

When the outline of letters is created, the edges of letters will be transformed into Path. Clicking and dragging the Path and Anchor point, the shapes of the letters can be changed.

To create the outline of letters:

- A. Select one or more than one letter or word.



- B. Give Create Outline command from Type menu or press Shift Ctrl O, and selected text will be transformed into Outline.

When the letters will be transformed into Outline, the text will no longer be fonts. It will be changed into graphics. The shape of the letters can be changed following the rules of editing Path, and filling color and adding gradient will be possible, but can not be used as fonts.

### Placement of Image in Illustrator

To place image in illustrator:

- A. Give Place command from File menu, Place dialogue box will come.
- B. Select the required file from Place dialogue box.
  - It should be previously known that in which folder and after what name the file has been saved. The required file will be selected after opening specific folder.
- C. Click Place button in the dialogue box, and the image of the selected file will be viewed on the screen.
  - A cross sign will be viewed on the total image when the image of the Photoshop is placed in the Illustrator. Click outside and the cross-sign will be removed. Click the image with the Selection Tool, and the image will be selected and four resize boxes on four arms and four on the angles will be viewed. Clicking and dragging the resize boxes, the images can either be enlarged or reduced.

### Exercise

1. How many media are combined in the multimedia?  
A. 1  
B. 2  
C. 3  
D. 4
2. In which work is multimedia used?  
A. For preparing examination result; B. For calculating shopping expenditure;  
C. For preparing scoresheet of cricket; D. For making animation film;
3. Which one is multimedia Software?  
A. Microsoft Work B. Microsoft Powerpoint  
C. Microsoft Excel D. Microsoft Access
4. Application of Multimedia\_  
i. Has made the presentation of text impressive;  
ii. Has made the work of printing and publication easy;  
iii. Has made the accounts easy;

Which one is correct?

- a. i & ii b. i & iii
- c. ii & iii d. i, ii & iii

**Read the chapter below, and answer the question nos. 5 & 6:**

Mr. Rakib is the chief executive of a renowned company. A foreign delegate will come to visit his company tomorrow. He has made a presentation in his laptop and he will show it to them. He took the help of a piece of Software for the presentation.

5. Which Software is suitable for Mr. Rakib for his representation?  
A. Microsoft Word B. Microsoft Powerpoint  
C. Microsoft Excel D. Microsoft Access
6. The Software which is used by Mr. Rakib\_  
i. will make the presentation impressive by using animation.  
ii. will show the activities of the company by using sound and video.  
iii. will prepare the account.

Which one is correct?

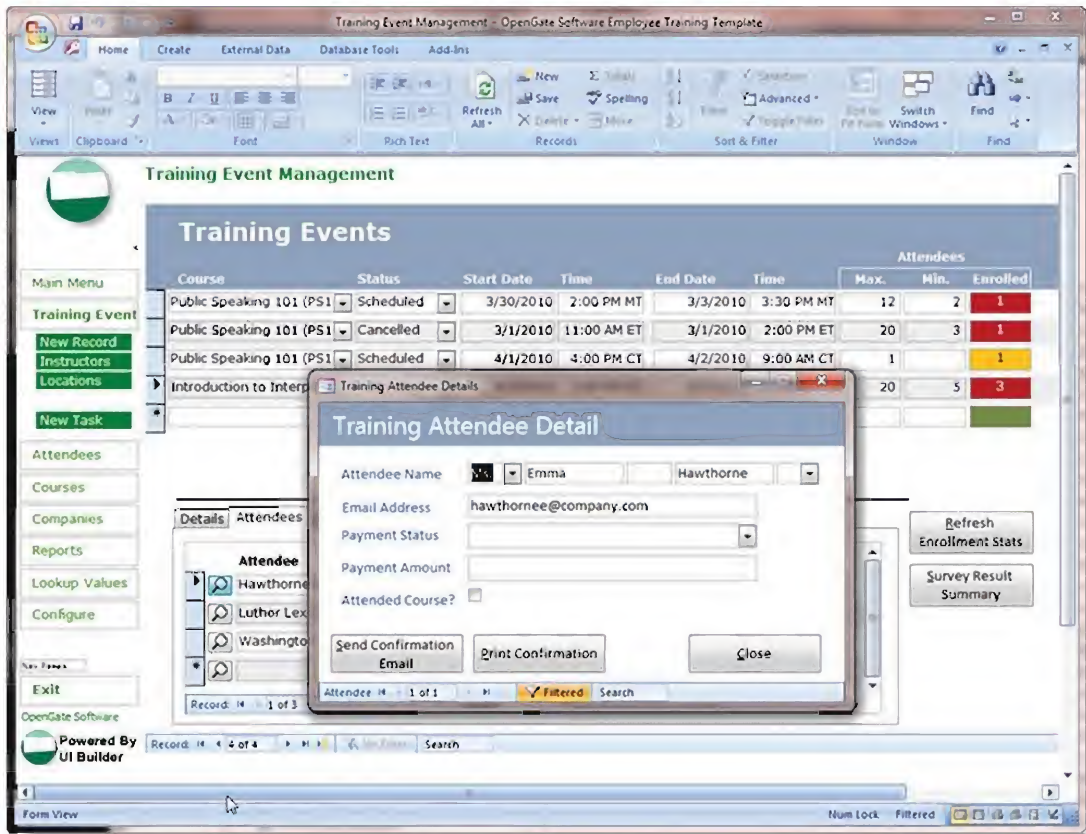
- a. i & ii b. i & iii
- c. ii & iii d. i, ii & iii

7. Explain the importance of Presentation Software to present anything.
8. 'The present publication industry is completely dependent of Graphics Software,' explain with logic.



# Sixth Chapter

## The Use of Database

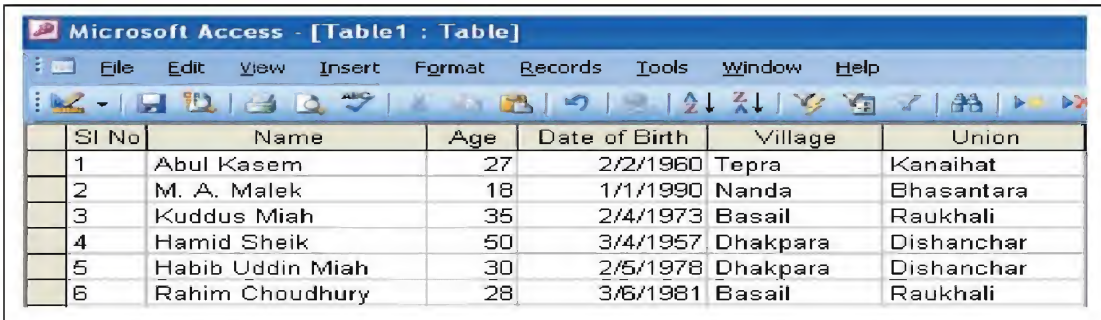


**After completing this chapter, we will be able to:**

- Analyse the concept of database;
- Describe the techniques of Database Management System (DBMS);
- Explain the importance of Database Management System; and
- Prepare a database by using the software.

## The Concept of Database

Database is called the storehouse of information. It is a computer oriented process by which collected information can be stored and recollected whenever it is necessary. In other words, database is the store of collected data from where information can be collected in different ways to take important decisions. To define more easily, database is an organised list of voluminous data from where a requisite data is identified and picked easily as well as quickly. In this storehouse, voluminous information of different kinds are saved. A user can collect any information from this



The screenshot shows the Microsoft Access interface with a table named 'Table1 : Table'. The table has the following data:

SI No	Name	Age	Date of Birth	Village	Union
1	Abul Kasem	27	2/2/1960	Tepra	Kanaihat
2	M. A. Malek	18	1/1/1990	Nanda	Bhasantara
3	Kuddus Miah	35	2/4/1973	Basail	Raukhali
4	Hamid Sheik	50	3/4/1957	Dhakpara	Dishanchar
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
6	Rahim Choudhury	28	3/6/1981	Basail	Raukhali

store at anytime as per his/her requisition. Database is also called 'Database Management System' (DBMS). As the data saved in the information storehouse is used in different management work, it is called Database Management System (DBMS). Classified information is stored in different files with different names. So the requisite information can be found easily.

A database is usually formed with columns and rows. Every column has a heading that indicates what type of data is contained on it. The headings are recognised as fields. A row is formed with some columns placed side by side. Each row is called the record.

Every column that contains Serial number, Name, Age, Date of Birth, Village, Union etc., is a field, and under these fields data like Abul Kasem, 27, 2/2/1960 Tepra Kanaihat are listed. Several fields, taken from the same row comprises a record. In the database placed above has 6 fields and 6 records.

Data has been started preserving in the database files in computer since the 1960s. Then a database was formed with a data table, but now the concept of database has developed in many respects. Nowadays, one or multiple files of datatables, query, form, report, macro, module, etc., can be saved under a database so database is one or multiple files enriched with data or information. Some essential database programmes are Microsoft Access, Foxpro, Debase, Foxbase, Oracle, Fourth Dimension, Paradox, etc.

## Characteristics of Database Programme

- Voluminous data is stored in an organised way by preparing tables in database, and that can be used whenever required.
- The accounts of industries, inventory management, annual report, production and sale accounts, etc., can be stored and controlled easily.
- Any required information from the capacious store of enormous database can easily be traced out.
- It is possible to take print out preparing a report with the necessary records picking from the mammoth store of database. Graph, chart and picture can be inserted to the report.
- It is possible to create mailing label with the necessary records taking from the database.
- The data entry is made limited by imposing condition in fields for not making any flaw while giving entry in database programme. It is called input validation. Suppose that entry is being given to a salary field of a datatable where minimum salary is Tk 2000 and maximum is Tk 11500. If a condition of input validation of  $\geq 2000$  and  $\leq 11500$  is given in this field, no entry will be accepted except minimum Tk 2000 or above and maximum Tk 11500 or below, and an error message will be shown.
- Datatable can be created by separating records from database by imposing conditions in query.
- A relation can be created to exchange data between two tables on the basis of certain fields.
- Index is used to find out information from database. If any index is created on a field, the value and the record-reference of the field is arranged in an order. An index file can arrange the records in different ways without changing the original datafile. One can easily find a topic, just seeing the content of a book. In the same way, it is possible to find information easily even from a database.
- A link is possible to create among the files. So, when a piece of information saved in other linked file is updated, it will be updated automatically in other files too.
- The record structure of data in a database can be changed if necessary. When some pieces of work need to be done repeatedly, a Macro can be created collectively with these jobs, and transforming those into a single action, it can be used time after time. It saves time and the users get rid of doing the same work repeatedly.



## The Concept of Database and Access

The work of a database is done in microcomputer mainly with Microsoft Access software which is a popular database software created by Microsoft corporation.

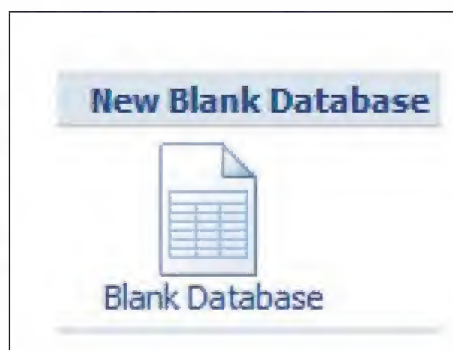
## Preparation for Starting Work in Access Programme

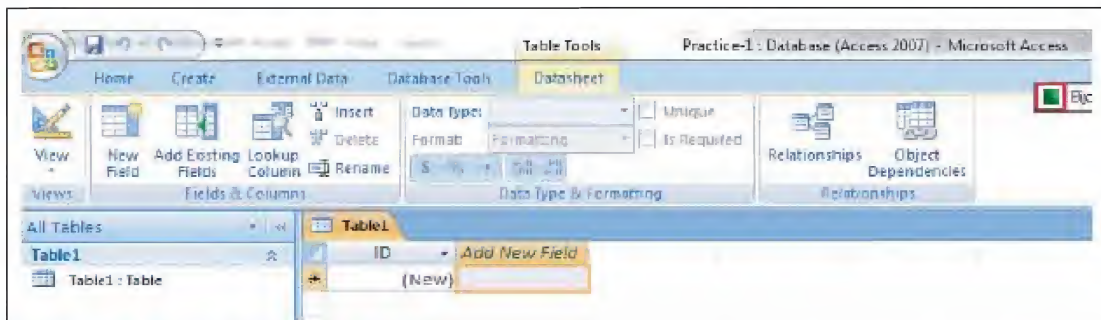
Microsoft Office Access is required to instal in the computer for doing the work of database with Access programme.

## Opening Access Programme

To open Microsoft access programme:

1. Click the start button taking the mouse pointer on it below the left corner of the screen, and a menu will appear on the screen.
2. When the mouse pointer will be placed on All Programmes of this menu, another menu will be visible.
3. Clicking Microsoft Office, you will get a list of programmes of Microsoft Office in another menu.
5. If you select Microsoft Office Access command from this list, it will open.
6. Click on the icon of Blank Database on the left side above Microsoft Office Access window and put the file name of in the blank dialogue box. Type 'Practice -1'.
7. Click on the folder icon of the right corner of File Name edit bar, 'Practice-1' will remain as the new file name in the dialogue box. If it is required to save in any folder, create that folder.
8. If you click on 'OK' button in the dialogue box, the previous dialogue box will be restored.
9. If you click on 'Create' button in the dialogue box, a blank window will come for creating table. 'Practice-1: Database...' will be written on the title bar of the window.





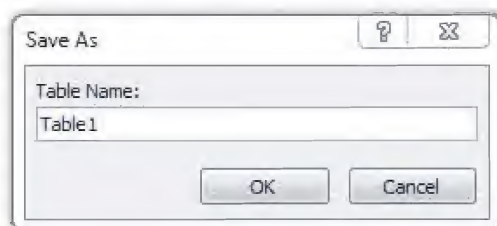
## Creating Database Table

Creation of Database Table will be started from Practice -1 window. To do this:

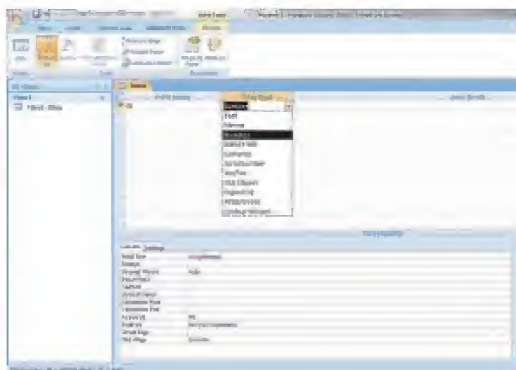
1. Select 'Design View' from the drop-down menu of 'View', and 'save as' dialogue box will come. In the dialogue box of table name, 'Table-1' will be written. The database table will be saved after this name. Click 'Ok' button to save the name of the table.

2. The window of the fields of database table will come.

3. Press 'Tab' button after typing serial number in the cell of field name, the cursor will go to the cell of 'Data Type'. If you click in the drop-down arrow in this cell, a list of different types of data will be viewed such as text, number, currency, date/time, etc.



- Select the requisite data type from this list. If 'number' is selected, calculation can be done with the data of this field. Age can be calculated either on the date or on time or on information of datafield. Mathematical works like summation, subtraction, multiplication, division, etc. can not be done with letter oriented datafield.
- With the selection of datatype, some other aspects of data in the cells below field properties should be selected too, for example, in the right cell of 'Field Size', it must be mentioned how big will be the size of fields and what the other aspects will be. The field has an own standard. It can be changed if necessary.



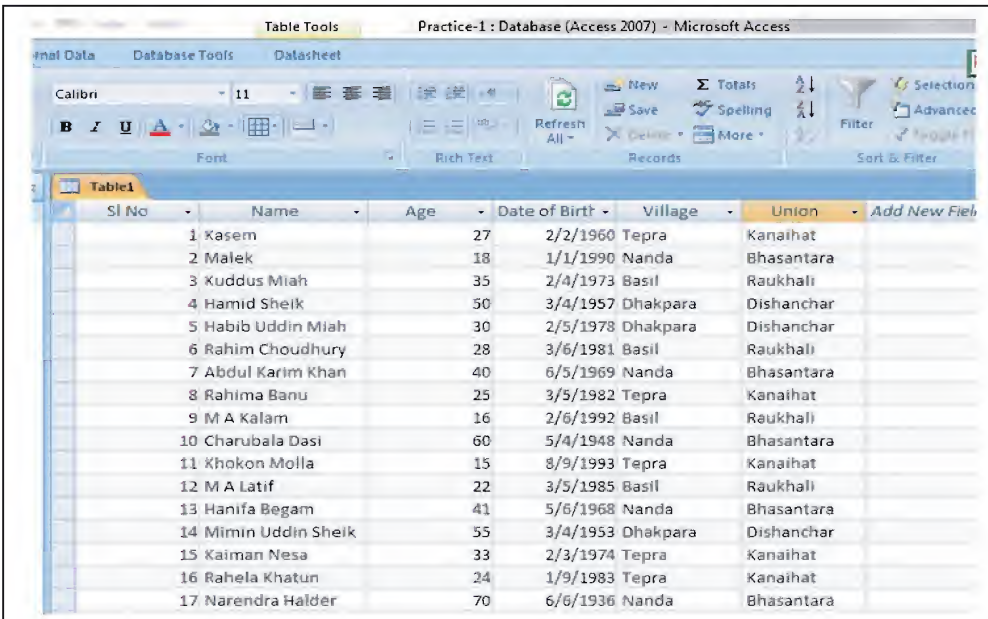


A Field size should be bigger than the requisite size so that data can not be destroyed, but it should not be unnecessarily big in size.

4. After completing typing the field names and clicking 'View Icon' or selecting 'Datasheet View' from view drop-down on the left corner above, a dialogue box will come for the saving command of the table.
5. If you click 'Yes' button in the dialogue box, 'Datasheet View' or 'Table 1 View' window will be visible, and data will be entered into this window.

## Data Entry

The first field of 'Datasheet View' always remains selected. If it is not, select it and complete data entry typing in the usual system of word processing.



Sl No	Name	Age	Date of Birth	Village	Union	Add New Field
1	Kasem	27	2/2/1960	Tepra	Kanaihat	
2	Malek	18	1/1/1990	Nanda	Bhasantara	
3	Kuddus Miah	35	2/4/1973	Basil	Raukhali	
4	Hamid Sheikh	50	3/4/1957	Dhakpara	Dishanchar	
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar	
6	Rahim Choudhury	28	3/6/1981	Basil	Raukhali	
7	Abdul Karim Khan	40	6/5/1969	Nanda	Bhasantara	
8	Rahima Banu	25	3/5/1982	Tepra	Kanaihat	
9	M A Kalam	16	2/6/1992	Basil	Raukhali	
10	Charubala Dasi	60	5/4/1948	Nanda	Bhasantara	
11	Khokon Molla	15	8/9/1993	Tepra	Kanaihat	
12	M A Latif	22	3/5/1985	Basil	Raukhali	
13	Hanifa Begam	41	5/6/1968	Nanda	Bhasantara	
14	Mirmin Uddin Sheikh	55	3/4/1953	Dhakpara	Dishanchar	
15	Kaiman Nesa	33	2/3/1974	Tepra	Kanaihat	
16	Rahela Khatun	24	1/9/1983	Tepra	Kanaihat	
17	Narendra Halder	70	6/6/1936	Nanda	Bhasantara	

The font, font size, etc. will be selected before data entry, but this job can be done anytime in the middle of the job. Press the 'Tab' button after the completion of typing data of a field to take the cursor to the next field. After typing the data of the last field, press the 'Tab' button of the keyboard, and the cursor will go to the first field of next record. Creating a Table or Database will be completed in the same process. Keep in mind that you have to save data at regular intervals, and to do the job, click 'save icon' or give 'save' command from the drop-down menu of office button, or press Ctrl S button of the keyboard.

The above database table can be created according to the described process.

## Changing Font Size

If you change the font size keeping the insertion pointer in any cell of the table, the font size of the whole table will be changed. The font size of a single cell can not be change separately.

## Correction of spelling error

Take the insertion pointer and click it to the cell where the correction of spelling error is required. Following the general rule, type the correct spelling of the word to be corrected.

## Closing and Opening of Database File

It is impossible to enter information, make correction and do the editing at a time in a database file when the bulk is large. So, what is possible to do at a time should be done, and the file will be saved and closed. The rest of the work will be completed after opening again.

### To open a closed file

1. Enter the folder in which the file is saved.
2. Select the file clicking on it.
3. Click the open button on the menu bar above, and the database file will be opened.
4. Click double on the 'Table' left, the table prepared as database will open.

The works of the next phase will be started from here.



## Inserting New Field and Column to Table

To insert new fields to database table:

1. If You Click either 'View' icon or select 'Design View' from the list of 'View Drop-down', you will see 'Design View' window.
3. Click 'Design', and the ribbon of 'Design Menu' will be exposed. Click 'Insert Rows' and a new field will be inserted above the cell where the insertion pointer stays.
4. Suppose that Male/Female will be typed as the name of the new field.
  - Click 'View' icon or select 'Datasheet View' command from the list of 'View Drop-down', a message box for saving field will come. Click the 'Yes' button of message box.

Getting back to datasheet window, you will find that a new field named 'Male/Female' has been inserted. You have filled the field.

## Delete Field or Column

To delete unnecessary field:

1. Select the field. Put the insertion pointer on the field and it will be transformed into a downward arrow. Click and the whole column will be selected.
2. Click either 'Delete' icon of the 'Home' menu or on the ribbon of datasheet menu, the whole column with the entire field will be deleted.

A cautionary message box will come before the activation of deleting command. Click 'Yes' button and the selected field will be permanently deleted. Once deleted, it can not be undone.

## Deleting Records or Rows

To delete records or rows:

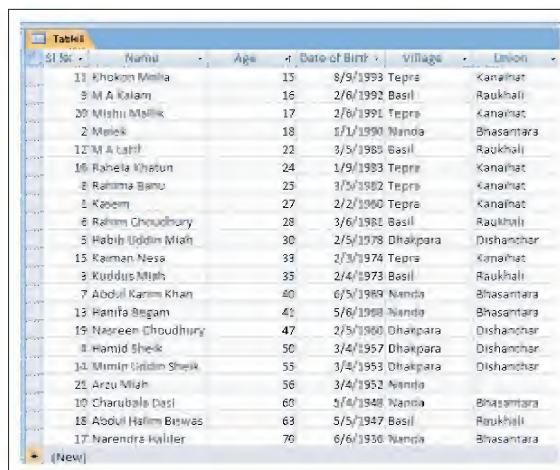
1. Select the record or row. Taking the insertion pointer at the extreme left of the row, click the mouse, and the whole row will be selected.
2. Click 'Delete' icon on the ribbon of Home menu and a cautionary message box will come before the activation of deleting command.
3. Click 'Yes' button and the selected row will be permanently deleted. Once deleted, it can not be undone.

## Alphabetical and Cardinal Sorting of Data

The entire database can be sorted alphabetically and cardinally on the basis of either a field or a column after preparing a table. Alphabetical and cardinal sorting can be done in both the Ascending and Descending order. Ascending Order means sorting from small to large order (A... B... C... Z, 1... 10... 50... 100) and Descending Order means sorting from large to small order (Z ...C ...B ...A, 100 ...50 ...10 ...1).

The datafield of names, villages and unions can be sorted alphabetically and the datafield of serial number, age and date of birth can be sorted cardinally.

Put the insertion pointer in any cell of the field to sort the data of a table on the basis of the age. Click the Ascending icon on the ribbon of Home menu, and the entire data will be sorted on Ascending Order



Sl No.	Name	Age	Date of Birth	Village	Union
11	Khokon Molla	15	8/9/1993	Tepra	Kanailhat
9	M A Kalam	16	2/6/1992	Basil	Raukhali
20	Mishu Malik	17	2/6/1991	Tepra	Kanailhat
2	Melek	18	1/1/1990	Nanda	Bhasantara
12	M A Latif	22	3/5/1989	Basil	Raukhali
16	Rahela Khatun	24	1/9/1983	Tepra	Kanailhat
8	Rahima Bano	25	1/5/1982	Tepra	Kanailhat
1	Kasem	27	2/2/1960	Tepra	Kanailhat
6	Rahim Choudhury	28	3/6/1981	Basil	Raukhali
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
15	Karman Nesa	33	2/3/1974	Tepra	Kanailhat
3	Kuddus Miah	35	2/4/1973	Basil	Raukhali
7	Abdul Karim Khan	40	6/5/1989	Nanda	Bhasantara
13	Farida Begam	41	5/6/1968	Nanda	Bhasantara
19	Nareem Choudhury	47	2/3/1960	Dhakpara	Dishanchar
4	Hamid Sheikh	50	3/4/1957	Dhakpara	Dishanchar
14	Momin Uddin Sheikh	55	3/4/1953	Dhakpara	Dishanchar
21	Arzu Miah	56	3/4/1952	Nanda	Bhasantara
10	Charubala Das	60	5/4/1948	Nanda	Bhasantara
18	Abdul Halim Biswas	63	5/5/1947	Basil	Raukhali
17	Narendra Halder	70	6/6/1936	Nanda	Bhasantara

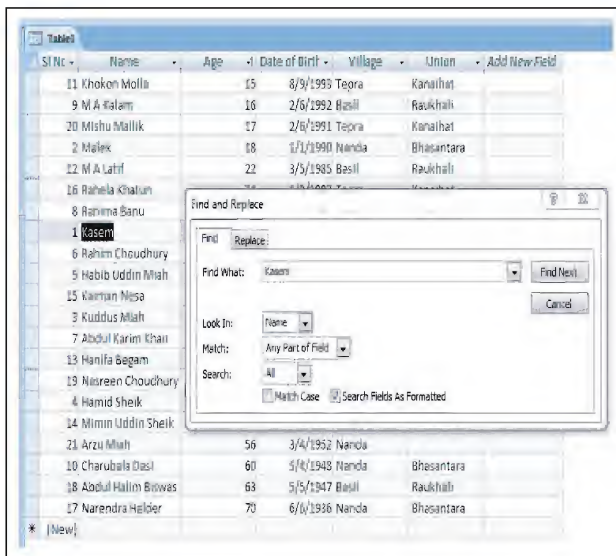
according to the age. Similarly, if you click the Descending icon, all data will be sorted as per age.

The complexion of the record will be changed after the sorting of data, but the other information will remain unchanged, for example, after sorting in the Ascending Order on the basis of age, the record of number 11 gets on the top of the table as he is the youngest of all. If we notice, we will see that the other information remain unchanged. If the change is done mistakenly, give undo command immediately. They will restore to the previous state.

### Searching Information

To find out the name of a particular person from a database containing a huge bulk of data:

1. Click 'Find' icon on the ribbon of 'Home' menu, and you will get 'Find and Replace' dialogue box.
2. Write the name or part of the name of the person to be searched out on 'Find What' edit bar of the dialogue box.
  - As a part of the name, either the title or surname can be typed.
3. Select name from the list of 'Look in drop-down' of the dialogue box.
  - From the list of 'Match drop-down' select 'Any Part of Field'.
4. Click 'Find Next' button of the dialogue box.
  - As soon as you click, the name, title or surname typed in the cell of 'Find What' will be selected. If the word is the title or part of many names, click again the 'Find Next' button. In this way, the next name having the same part or title will be selected. Clicking repeatedly 'Find Next' button, all the names can be viewed. When the last name is viewed, a conformation message about the completion of finding out names will come. If there is no need to find out any more name, click the cancel button of the dialogue box.





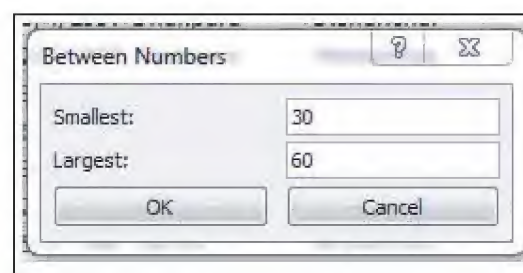
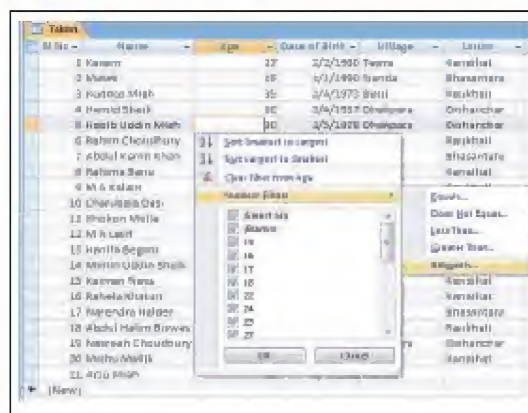
## Searching Conditional Information

It may require to find out either the information of the people of village 'Nanda', or the union of 'Raukhali', or people ages range from 30 to 60, people below 18 years of age, etc. Besides, more conditional search out may be required, and it is very easy. After inserting the conditions and giving command to find out, instantly the information covering the conditions will be viewed on screen. Searching conditional information are shown below:

Searching records of people whose ages range from 30 to 60.

To find out their records:

1. Put the insertion pointer in any cell of 'Age' field.
2. Click the 'Filter' icon on the ribbon, and the Filter dialogue box will be viewed on the screen.
3. Select 'Between' from 'Number Filters' drop-down menu of the dialogue box, and 'Between Numbers' Dialogue box will come.
4. Typing 30 in the 'Smallest' cell and 60 in the largest cell in the 'Between Numbers' dialogue box, click Ok button.
5. The records of the people ages from 30 to 60 will be viewed on the screen.



To undo the conditional records, place mouse pointer on 'Toggle Filter' icon of ribbon, and the icon will work as 'Remove Filter'. If you click now, the conditional

records will restore to the previous state and the 'Toggle Filter' icon will be transformed into 'Apply Filter' icon. Click the 'Apply Filter' icon to keep the original arrangement active.

Sl No	Name	Age	Date of Birth	Village	Union
3	Huddus Miah	35	2/2/1973	Basil	Raukhali
4	Hamid Sheikh	50	3/4/1957	Dhakpara	Dishancher
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishancher
7	Abdul Karim Khan	40	6/5/1969	Nanda	Bhasantara
10	Charubala Das	60	5/4/1948	Nanda	Bhasantara
13	Hanifa Begam	41	5/6/1968	Nanda	Bhasantara
14	Mimim Uddin Sheikh	55	3/4/1959	Dhakpara	Dishancher
15	Kaiman Nesa	33	2/3/1974	Tepora	Kanailhal
19	Nasreen Choudhury	47	2/5/1960	Dhakpara	Dishancher
21	Arzu Miah	56	3/4/1952	Nanda	



### Searching Information on the Basis of Village Name

There are names of four villages in sample database. Records of either any of the villages or two or three villages may be viewed on the screen.

To view any one of the four villages :

1. The records of the village you want to view, clicking the mouse pointer, put the insertion pointer in the cell of the village. Suppose that the insertion pointer is put in any of the cells of the village of 'Basail'.

2. You will get a menu by clicking the 'Selection' icon on the ribbon. Select Equals 'Basail' and Contains 'Basail'

Sl No	Name	Age	Date of Birth	Village	Union	Add New Field
3	Kuddus Miah	35	2/4/1979	Basail	Raukhali	
6	Rahim Choudhury	28	3/6/1981	Basail	Raukhali	
9	M A Kalam	16	2/6/1992	Basail	Raukhali	
12	M A Latif	22	3/5/1985	Basail	Raukhali	
18	Abdul Halim Biswas	63	5/5/1947	Basail	Raukhali	
* (New)						

from this menu, you will get only the records of the people of 'Basail'.

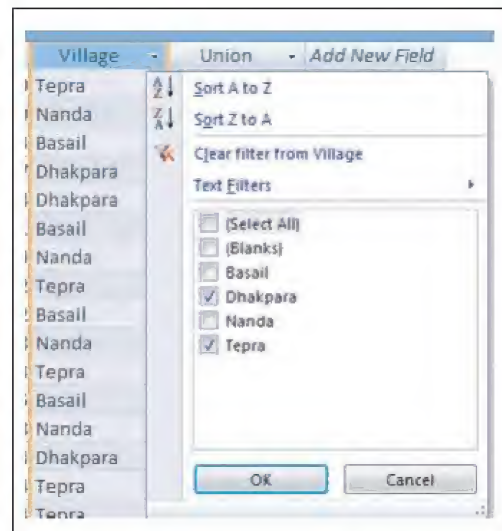
- If you select Does not Equal Basail and Does not Contains Basail, the records of other villages except 'Basail' will be viewed.

To undo or delete conditional records follow the instruction described above.

### Viewing Records of More Villages

To view records of more villages at a time:

1. If you put the insertion pointer in any cell of 'Village Field', a drop-down arrow will be added to the 'Village Field' at the right side. Click the drop-down arrow, a short dialogue box will come. Inside the dialogue box
2. Selecting 'All' and clicking 'Blanks' checkbox, remove the tick marks.
3. The tick marks in the checkboxes beside the names of the village the record of which you would like to view will be kept, and the other tick marks in the checkboxes will be removed. It is viewed in the image at the right side that keeping the tick marks in the checkboxes of 'Dhakpara' and 'Teptra', the rest of the tick marks will be removed.



4. Clicking the 'Ok' button of sortbox, view the records of the villages of 'Dhakpara' and 'Teptra'.

To undo or delete the shown records, follow the previous steps.

Sl No	Name	Age	Date of Birth	Village	Union
1	Kasem	27	2/2/1960	Teptra	Kanailhat
4	Hamid Sheikh	50	3/4/1957	Dhakpara	Dishanchar
5	Habib Uddin Miah	30	2/5/1978	Dhakpara	Dishanchar
8	Rahima Banu	25	3/5/1982	Teptra	Kanailhat
11	Khokon Molla	15	8/9/1993	Teptra	Kanailhat
14	Mimin Uddin Sheikh	55	3/4/1953	Dhakpara	Dishanchar
15	Kalman Nesa	33	2/3/1974	Teptra	Kanailhat
16	Rahela Khatun	24	1/9/1983	Teptra	Kanailhat
19	Nasreen Choudhury	47	2/5/1960	Dhakpara	Dishanchar
20	Mishu Mallik	17	2/6/1991	Teptra	Kanailhat

## Searching Information on the Basis of Male/Female

There is a field in the database on the title of Male/Female. Only the records of male and female can be viewed from this database. In the field, M stands for male and F stands for Female.

To get the information of only the female from this database

1. Clicking the mouse pointer, put the insertion pointer in any field of 'F'.
2. Click the 'Selection' icon on the ribbon, and a menu will be viewed.

Sl No	Name	Male/F	Age	Date of Birth	Village	Union
8	Rahima Banu	F	25	3/5/1982	Teptra	Kanailhat
10	Charubala Dasi	F	60	5/4/1948	Nanda	Bhasantara
13	Hanifa Begam	F	41	5/6/1968	Nanda	Bhasantara
15	Kalman Nesa	F	33	2/3/1974	Teptra	Kanailhat
16	Rahela Khatun	F	24	1/9/1983	Teptra	Kanailhat
19	Nasreen Choudhury	F	47	2/5/1960	Dhakpara	Dishanchar
+ (New)						

- If you select Equals 'F' and Contains 'F' from this menu, only the records of the female of different villages will be viewed on the screen.

## Query and Report

Collecting and viewing conditional information are possible in query system except the methods described above, but for saving conditional records and taking print out, viewed information should be saved as query. Even, it will be transformed as report to take print or supply as a printed matter. In query, information is presented in an attractive way.

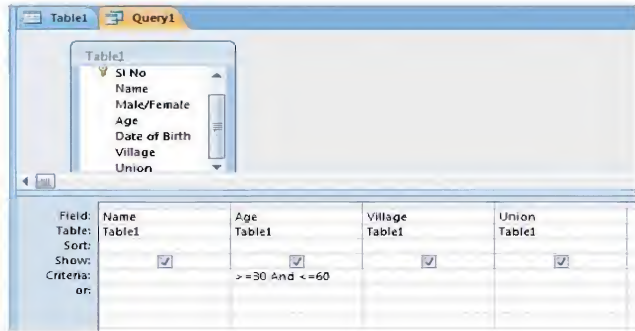
## Collecting and Saving Information in Query Method

Suppose that collection and saving of information will be in the query process on the basis of created table. To proceed with the operation:

1. Open 'Table 1' of database. Only one table exists here.
2. Click 'Query Design' icon on the ribbon of 'Create' menu, a window of collecting information in query process will come on the screen. 'Show

Table' dialogue box will come with this window too.

3. If you select 'Table 1' in 'Show Table' dialogue box and click 'Add' button, all the fields or headings of table will be found included in the fieldstring.



4. Now click the 'Close' button of 'Show Table' dialogue box to close it.
5. If you click double on a name of field of the fieldbox, it will come in the first cell of fieldstring. In this way, all the fields can be gradually included in the fieldstring or only the necessary fields can be included. In this sample, the fields of name, age, village, and union have been included.
6. The field on the basis of which the information is required, add condition in the cell of 'Criteria' below the field, for example, several conditions can be imposed on age factors. The information of the people above, below and within the certain age limit can be collected.
  - A. If >30 is typed, the information of the people aged above 30 will be collected. If >=30 is typed, the records of people aged 30 and above will be shown.
  - B. If <30 is typed, the information of the people aged below 30 will be shown. If <=30 is typed, the information of the people aged 30 and below will be viewed.
  - C. If >=30 and <=60 is typed, the records of the people aged 30 and above and 60 and below will be shown.
7. After typing the conditions, click 'Run' icon on the ribbon of 'Design' menu, and the records on conditions will be shown.
  - If you collect information on query process, the title 'Query 1' will be shown beside 'Table 1'.

Name	Age	Village	Union
Kuddus Miah	35	Basail	Raukhali
Hamid Sheik	50	Dhakpara	Dishanchar
Habib Uddin Miah	30	Dhakpara	Dishanchar
Abdul Karim Khan	40	Nanda	Bhasantara
Charubala Dasi	60	Nanda	Bhasantara
Hanifa Begam	41	Nanda	Bhasantara
Mimin Uddin Sheik	55	Dhakpara	Dishanchar
Kaiman Nesa	33	Tepra	Kanaihat

8. Click 'Save' icon, and 'Save as' dialogue box will come.
  - After typing a name of query, for example, 'Age Query' in the dialogue box, if you click OK button, 'Query 1' will be changed to 'Age Query', and it will be enlisted in the database window. Query icon will be shown with the name

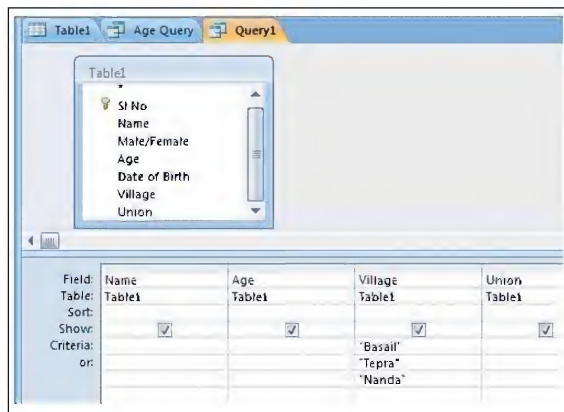


of query. Click double on the file of 'Age Query' in database window, the file will be activated. As long as the file is active, prints can be taken, preserved, supplied and distributed.

## Collecting Information on the Basis of Villages and Unions in Query Process

To collect information on the basis of villages and unions:

1. Select 'Table 1' from database window.
  2. Click 'Query Design' icon on the ribbon of 'Create' menu, and get a diagram for collecting information. 'Show Table' dialogue box will come with this diagram.
  3. Selecting 'Table 1' in 'Show Table' dialogue box if you click 'Add' button, all the fields will be found included in the fieldstring.
  4. Clicking 'Close' button of 'Show Table' dialogue box, close it.
  5. If you click double on a name of a field of the fieldbox, it will come in the first cell of fieldstring. In this way, all the fields can be gradually included in the fieldstring or only the necessary fields can be included. In this sample, the fields of name, age, village, and union have been included.
  6. The field on the basis of which the information is required, add condition in the row of 'Criteria' below the field.
  7. Clicking in the row of 'Criteria' straight below the village field, put the insertion pointer.
  8. Suppose that you have to collect the records of the village of Basail, Tepra and Nanda. To get the job done
    - A. Type 'Basail' in the cell of 'Criteria'.
    - B. In the row below 'Basail', put the insertion pointer clicking the mouse and type 'Tepra'.
    - C. In the row below 'Tepra', put the insertion pointer clicking the mouse and type 'Nanda'.
- Quotation Marks will automatically be put around the names that will be typed.

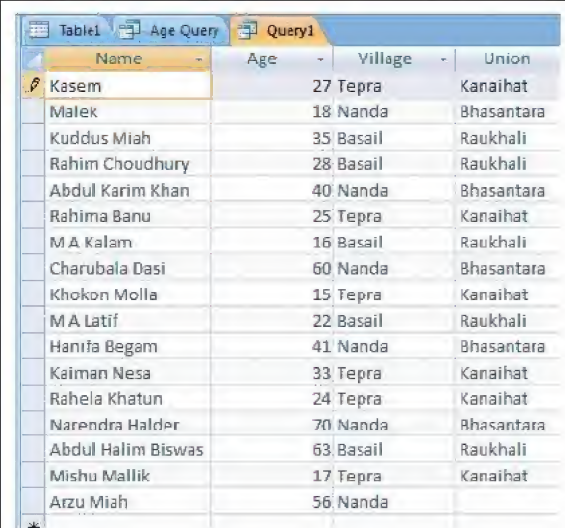




9. Click 'Run' icon on the ribbon of 'Design' menu after typing the conditions, the records will be shown on the screen as required.

10. Click 'Save' icon, and 'Save as' dialogue box will come.

- After typing a name of query, for example, 'Village Query' in the dialogue box, if you click OK button, 'Query 1' will be changed to 'Village Query', and it will be enlisted in the database window. Query icon will be shown with the name of query. Click double on the file of 'Village Query' in database window, and the file will be activated. As long as the file is active, prints can be taken, preserved, supplied and distributed.



Name	Age	Village	Union
Kasem	27	Teptra	Kanaihat
Malek	18	Nanda	Bhasantara
Kuddus Miah	35	Basail	Raukhali
Rahim Choudhury	28	Basail	Raukhali
Abdul Karim Khan	40	Nanda	Bhasantara
Rahima Banu	25	Teptra	Kanaihat
M A Kalam	16	Basail	Raukhali
Charubala Dasi	60	Nanda	Bhasantara
Khokon Molla	15	Teptra	Kanaihat
M A Latif	22	Basail	Raukhali
Hanifa Begam	41	Nanda	Bhasantara
Kaiman Nesa	33	Teptra	Kanaihat
Rahela Khatun	24	Teptra	Kanaihat
Narendra Halder	70	Nanda	Bhasantara
Abdul Halim Biswas	63	Basail	Raukhali
Mishu Mallik	17	Teptra	Kanaihat
Arzu Miah	56	Nanda	



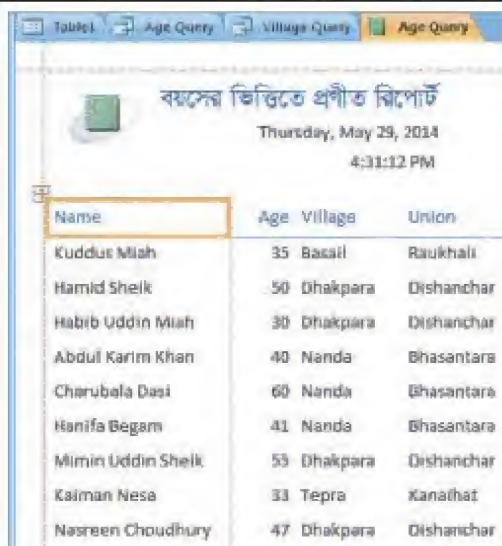
Name	Age	Village	Union
Kuddus Miah	35	Basail	Raukhali
Hamid Sheik	50	Dhakpara	Dishanchar
Habib Uddin Miah	30	Dhakpara	Dishanchar
Abdul Karim Khan	40	Nanda	Bhasantara
Charubala Dasi	60	Nanda	Bhasantara
Hanifa Begam	41	Nanda	Bhasantara
Mimin Uddin Sheik	55	Dhakpara	Dishanchar
Kaiman Nesa	33	Teptra	Kanaihat
Nasreen Choudhury	47	Dhakpara	Dishanchar
Arzu Miah	56	Nanda	

## Report

Usually information is supplied or distributed as report format. Report can be prepared either on the basis of the entire database or on query file. A report

based on age query can be prepared. The file on which the report will be prepared must be selected. After the selection

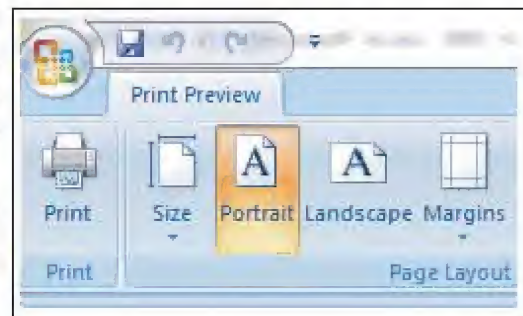
1. Click 'Report' icon on the ribbon of 'Create' menu, and the window of preapring report will be shown.
  2. The fields of query files are kept in order in this window.
  3. The sideways extension of these fields may be wider than it is required. To bring the measurement in usual position:
- A. Select the field by clicking the name of the field. Clicking and dragging either the left or the right margin the measurement of the field can be reduced or extended.



Name	Age	Village	Union
Kuddus Miah	35	Basail	Raukhali
Hamid Sheikh	50	Dhakpara	Dishanchar
Habib Uddin Miah	30	Dhakpara	Dishanchar
Abdul Karim Khan	40	Nanda	Bhasantara
Cherubela Dasi	60	Nanda	Bhasantara
Hanifa Begam	41	Nanda	Bhasantara
Mimin Uddin Sheikh	55	Dhakpara	Dishanchar
Kalman Nesa	33	Tepra	Kanaihat
Nasreen Choudhury	47	Dhakpara	Dishanchar

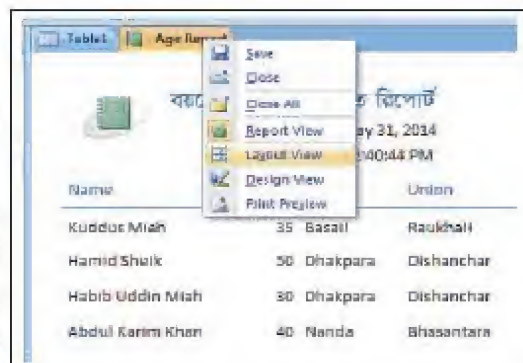
Besides, the page number below the report, boxes of date and time at the right side can be reduced and extended in the sameway or placed in another position by dragging.

Clicking double on the title of the report and after selecting, it is possible to write in Bangla crasing English letters.



- B. Click drop-down arrow of 'View' icon and select 'Print Preview' command from drop-down menu. The print preview of the report will be on the screen.

4. If the presentation is not in the expected order, click 'Close Print Preview' icon on the ribbon at the right side, and the report will restore to the 'Layout View'.



- If it is required to rearrange the size and shape of the field, do it trying repeatedly.

5. Before taking print, clicking the icons of size, portrait, landscape, margin on the ribbon, the measurement of page and margin should be adjusted as required. Then connect the printer to the computer and click the 'Print' icon and the printing will be started.
6. After the satisfactory editing work, click 'Save' icon, and 'Save As' dialogue box will be viewed.
7. In the 'Save As' dialogue box, type a name of the report, for example, 'Age Report', and click Ok button.
- The report file will be saved as 'Age Report' and be listed in the database window in the same name.

### Adding Gridlines to Report

Gridlines means a pattern made from horizontal and vertical lines crossing each other on the records. Usually gridlines stays under the field, but gridlines can be added over and under the records and removed if necessary. To add and remove gridlines:



1. Click 'Report Tab' pressing the right button of the mouse, and a drop-down menu will be viewed. Select 'Layout View', and the report will be transformed in a layout view.
2. Click inside the report.
3. The tools of adding gridlines to the ribbons will be active.
4. Click the downward arrow below the diagram of Gridlines, sample of different types of gridlines will be viewed. Of Horizontal, Vertical, Cross Hatch, Top, Bottom, Outline and None, requisite gridlines will be selected. The sample of gridlines which will be clicked, will be added on or below the records.
5. Click 'Width' drop-down arrow from gridline toolbox, and the sample of narrow and thick lines will be shown.

Name	Age	Village	Union
Roddus Miah	35	Sasail	Baukhali
Hamid Shafik	50	Dhakpara	Dekhanchar
Habib Uddin Miah	30	Dhakpara	Dekhanchar
Abdul Karim Khan	40	Nanda	Bhasantara
Charubella Das	60	Nanda	Bhasantara
Hanifa Begam	41	Nanda	Bhasantara
Momen Uddin Shafik	55	Dhakpara	Dekhanchar
Kalman Nesa	33	Tepa	Kanailat
Nasreen Choudhury	47	Dhakpara	Dekhanchar
Arzu Miah	56	Nanda	



If comparatively thick line is clicked, the gridline will be thick and on the other hand, if narrow line is clicked, the gridline will be thin.

6. Click 'Style' drop-down arrow from gridline toolbox to change the style of gridline, the samples of different lines will be shown. The sample which will be clicked, the gridline will be changed accordingly.
7. Click 'Color' drop-down arrow from the gridline toolbox to change the color of gridline, and a palette will be shown. The color which will be clicked, the gridline color will be changed accordingly.
8. Click downward arrow below the gridlines diagram from the toolbox to remove gridline from the report, and samples of different gridlines will be shown. Click 'None' at the bottom of the sample. The gridline imposed on the report will be removed.

After making the gridline thick or thin, imposing color on the lines and doing other requisite works, click outside the top margin, and the selection of gridline will no more be viewed.

### Exercise

1. Which of the following pieces of Software is used to find out a piece of information out of masses?
  - A. Database Software
  - B. Spreadsheet Software
  - C. Presentation Software
  - D. Word Processing Software
2. Which one of the following is used to fix the shape of a Field Name?
  - A. Create
  - B. Field name
  - C. Field Size
  - D. Design View
3. By using Database Programme\_
  - i. the annual account and the information of production can be preserved easily.
  - ii. the presentation of information can be faster.
  - iii. the required records can be found easily.



Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

**Read the chapter below, and answer the question nos. 4 & 5:**

Maleka Begum is the owner of a Garments Factory of Bangladesh. She wants to use computer for the smooth management of her company.

4. Which piece of Software is suitable for Maleka Begum?
- A. Database Software
  - B. Spreadsheet Software
  - C. Presentation Software
  - D. Word Processing Software
5. By using the software, Maleka Begum will be able to \_
- i. keep the information updated.
  - ii. add new information.
  - iii. reduce costing of office management.

Which one is correct?

- a. i & ii
- b. i & iii
- c. ii & iii
- d. i, ii & iii

6. Describe the process of inserting a new field in the above Database.
7. 'Database Management can enhance speed in the official works of a company.' Analyze.

**The End**

# 2018

**Academic Year**

## 9-10 ICT

নারী ও শিশু নির্যাতনের ঘটনা ঘটলে প্রতিকার ও প্রতিরোধের জন্য ন্যাশনাল হেল্পলাইন সেন্টারে  
১০৯ নম্বর-এ (টোল ফ্রি, ২৪ ঘণ্টা সার্ভিস) ফোন করুন



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